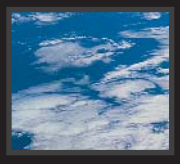
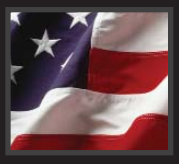
The InterAgency Board

2003 Annual Report
2004 Standardized Equipment List





Dedication

Dedicated to those brave Americans who stand forever vigilant to protect this country from those who would attempt to deny us our freedom. May their strength give us strength.

The IAB Member Organizations

Arlington County (VA) Fire Department
Austin-Travis County (TX) Emergency Medical Services
Boise (ID) Fire Department
Centers for Disease Control and Prevention
Chicago (IL) Fire Department
City of Las Vegas (NV)
Office of Emergency Management
City of Seattle (WA) Fire Department
Civil Support Team
Contra Costa County (CA) Office of the Sheriff
Homeland Security Office
Dartmouth College
Delaware Emergency Management Agency
Department of Defense
Department of Defense,
Office of the Deputy Assistant to the Secretary of
Defense, Chemical/Biological Defense
Department of Homeland Security
Department of Homeland Security,
Federal Emergency Management Agency
Department of Homeland Security,
Office for Domestic Preparedness
Department of Homeland Security,
Office of State & Local Interaction,
Science & Technology Directorate
Department of Veterans Affairs
Department of Veterans Affairs,
Emergency Management Strategic Healthcare Group
Downers Grove (IL) Fire Department
Environmental Protection Agency
Fire Department, City of New York (NY)
Florida Department of Law Enforcement
George Washington University
Hennepin (MN) Sheriff's Office
Hudson Marine Management
International Association of Chiefs of Police
International Association of Fire Chiefs
International Association of Fire Fighters
International Personnel Protection
Joint Program Executive Office for Chemical and
Biological Defense
Lawrence (KS) Police Department
Los Angeles County (CA) Fire Department
Los Angeles County (CA) Sheriff's Department
Louisiana State Police
Massachusetts Department of Fire Services
Massachusetts State Police,
Explosive Ordnance Disposal Unit
Miami Township (OH) Fire Protection Division
Minneapolis Bomb Squad
Nashau Fire Department
Natick Soldier Center
National Aeronautics and Space Administration
National Association of Emergency Medical Technicians
National Bomb Squad Commanders Advisory Board
National Emergency Management Association
National Fire Protection Association
National Institute for Occupational Safety and Health
National Institute for Occupational Safety and Health,
National Personal Protective Technology Laboratory
National Institute of Standards and Technology
National Institute of Standards and Technology,
Office of Law Enforcement Standards
National Memorial Institute for the Prevention of Terrorism
National Sheriff's Association
Naval Research Lab
New Castle County (DE) Police Department
New York State Emergency Management Agency
Occupational Safety and Health Administration (OSHA)
Orange County (CA) Fire Authority
Orlando Fire Department
Phoenix Fire Department
Placer County (CA) Health and Human Services
Sacramento County (CA) Sheriff Bomb Squad
Sarasota County (FL) Fire Department
Technical Support Working Group
Texas A&M
Texas Fire Service
U.S. Army Center for Health Promotion and
Preventative Medicine
U.S. Army Soldier and Biological Chemical Command,
Edgewood Chemical and Biological Center
U.S. Capitol Police
U.S. Coast Guard, National Strike Force
U.S. Marine Corps Chemical Biological Incident
Response Force
U.S. Marine Corps Systems Command
U.S. Secret Service
United States Marshal's Service
University of Connecticut
University of Finlay,
Center for Terrorism Preparedness
University of Missouri Fire and Rescue Training Institute
Urban Search and Rescue Response System
Virginia Department of Emergency Management
Yale University Emergency Medicine

Table of Contents

The 2003 InterAgency Board (IAB) Annual Report and the 2004 Standardized Equipment List (SEL)

Alan "A.D." Vickery
Assistant Chief of Fire, EMS, HAZMAT, and Homeland Security
Seattle Fire Department

In 2003, Alan "A.D." Vickery was the Assistant Chief of Fire, EMS, HAZMAT, and Homeland Security for the Seattle Fire Department. His lengthy resume covers over 38 years of field operational experience in fire operations, hazardous materials, heavy and technical rescue, marine firefighting, wildland fire, fire and arson investigation, basic law enforcement, advance CBRNE medical response, and disaster exercise and special events planning. Chief Vickery is a member of the National Fire Protection Association, the International Association of Fire Fighters, the International Association of Fire Chiefs, the International Association of Fire Investigators, Seattle Fire Department Officers Association, and the Arson Alarm Foundation. He is currently serving as an elected representative to the Seattle Fire Pension Board, elected board member of the Northwest Burn Foundation, Co-Chair of the Fire Alarm Center/Operations Committee, a Task Force Leader for Puget Sound Urban Search and Rescue (US&R) Task Force, a member of the National US&R Logistics Committee, Chair of the Seattle Fire Department's Anti-Terrorism and Metro Medical Strike Team (MMST) work group, a member of the State and Justice Departments' delegation to France to review terrorism response capabilities, a member of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction (also known as the Gilmore Commission), in addition to his role as State and Local Chair of the IAB. Chief Vickery has been involved in several noteworthy response efforts including the Seattle World Trade Organization demonstrations; the Oklahoma City Bombing; and the September 11, 2001 recovery effort in New York City.

Letter from the IAB Chair, A.D. Vickery

The InterAgency Board (IAB) for Equipment Standardization and InterOperability continues to be the voice of local, state, and federal first responders in advocating for national standards related to equipment, training, and response.

The Department of Homeland Security (DHS), at the direction of the President, is focusing on, and supporting, the development and implementation of appropriate standards in cooperation with other federal agencies and the Department of Defense. Additionally, the Department of Labor is actively engaged in setting minimum training requirements for all responders, including skilled support personnel. We endorse these efforts.

The IAB fully supports the decision to limit federal grant funds to items that meet or exceed recognized national standards.

We encourage and support increased investment in research and development of products that increase the personal safety of responders and the citizens we protect.

The marketplace remains confusing and challenging for the first responder. The ability to compare product performance, determine appropriate levels of protective gear, estimate maintenance and replacement costs, and gauge the time required for training either doesn't exist or is difficult to find. The IAB is working with the Memorial Institute for Terrorism Prevention (MIPT) and the Office for Domestic Preparedness (DHS/ODP) to put in place a user-friendly matrix containing this information. The 2004 SEL reflects and integrates components of this knowledge base. Additionally, we are reaching out to consumer information groups for methods on improving the format and usability of the information.

The IAB continues to involve a broad spectrum of response disciplines with a common underlying goal - the safety and operational effectiveness of our nation's first responders.

A.D. Vickery
IAB Chair

The IAB is a user-working group supported by voluntary participation from various local, state, federal government, and private organizations.

Mission

The InterAgency Board (IAB) for Equipment Standardization and InterOperability Working Group is designed to establish and coordinate local, state, and federal standardization, interoperability, and responder safety to prepare for, respond to, mitigate, and recover from any incident by identifying requirements for Chemical, Biological, Radiological, Nuclear or Explosives (CBRNE) incident response equipment.

Scope

The IAB supports the local, state, and federal responders' efforts in Homeland Security by:

- Serving in an advisory capacity to all federal agencies.
- Facilitating integration among local, state, and federal response communities to promote proper selection and use of the best available equipment and procedures to optimize safety, interoperability, and efficiency.
- Developing, maintaining, and updating a Standardized Equipment List (SEL) that provides the responder a reference to the type of equipment required to prepare for, respond to, mitigate, and recover from a CBRNE incident.
- Advocating for, assisting in, and promoting the development and implementation of performance criteria, standards, and test protocols for SEL-listed CBRNE incident response equipment.
- Encouraging the coordination of local and state response communities with established military and federal acquisition programs for procurement of SEL-listed CBRNE incident response equipment.
- Sharing knowledge, expertise, and technology regarding the detection, identification, warning, protection, decontamination, response management, and medical management of CBRNE incidents among local, state, and federal response communities.
- Providing a structured forum for the exchange of ideas among operational, technical, and support agencies for crisis and consequence management to promote interoperability among local, state, and federal response communities.
- Identifying and prioritizing CBRNE incident response equipment requirements.
- Encouraging manufacturers and governmental, military, and private agencies to sponsor priority research and development projects to satisfy local, state, and federal CBRNE incident response equipment requirements.
- Providing assistance and/or guidance to agencies, associations, and manufacturers, requiring operational testing of new and emerging equipment and technologies.
- Preparing and publishing an annual report to articulate the activities and accomplishments of the IAB.

IAB Chairman - The IAB Chairman is selected from the ranks of the local and state membership. Confirmation shall occur by a simple majority vote of the general membership present at the meeting at which the annual report is finalized. The Chairman is elected to a two-year term starting with the January 2002 meeting.

- The Chairman administers, organizes, and facilitates the actions of the IAB.
- The Chairman provides recommendations to the Federal Coordinating Committee and direction to the SubGroup chairs.

Federal Coordinating Committee (FCC) - A coordination committee that provides the interface between the IAB and sponsoring federal government agencies. The FCC consists of the federal officials from contributing agencies and departments. The FCC shall:

- Coordinate and leverage ongoing federal research, development, testing, and evaluation (RDT&E) efforts to meet the responder requirements as identified by the IAB.
- Solicit and coordinate mission support for the IAB, which includes activities such as organizational staff support, contributory funding, project sponsors, meetings, technical support, the IAB business cycle, and resulting products.
- Meet with the IAB Chairman on a regular basis to review SubGroup recommendations and actions.
- Meet to coordinate federal requirements for action by the IAB.
- Attend general membership meetings.
- Review and approve the annual operating budget for the IAB, and maintain a support staff to facilitate the operation of the IAB.

SubGroups/Committees

- SubGroups - The IAB has four equipment SubGroups that consist of subject matter experts:
  - Personal Protective and Operational Equipment (PP&OE)
  - InterOperable Communications and Information Systems (ICIS).
  - Detection and Decontamination (D&D)
  - Medical
- Committees - The IAB has two additional committees that consist of subject matter experts and the Co-Chairs of the above four SubGroups:
  - Standards Coordination Committee (SCC)
  - Science and Technology (S&T)
- Co-Chairs - Each SubGroup/Committee elects two Co-Chairs, one from the local and state ranks and a second from federal or private ranks. The Co-Chairs shall be elected for two-year terms with the elections for the local/state Co-Chair and the federal/private Co-Chair being conducted on alternating years. The first local and state Co-Chair will have a term of one year to achieve this alternating cycle. Co-Chairs may be re-elected when their term has ended; there are no "term limits" for the Co-Chairs.

The duties of SubGroup/Committee Co-Chairs are as follows:

- Direct the efforts to accomplish the scope of IAB activities as identified in this charter.
- Provide liaison with the IAB Chairman.
- Provide meeting minutes, status of ongoing projects, and written reports of recommendations and requirements from the SubGroup/Committee annually or as required.
- Serve as a member on the SCC and S&T Committee.
- Provide membership recommendations. It is the responsibility of the Co-Chairs to review membership participation annually and to ensure Sub-Group membership represents the interest across the entire responder community (Fire, Hazmat, Law Enforcement, EMS, Public Health, etc.)

• Membership -

- Participate in the SubGroups/Committees and lend their expertise and support to the IAB Mission.
- SubGroup/Committee membership will be limited to 20 voting members.
- SubGroup membership may be augmented with additional subject matter experts, as non-voting members, for specific projects, or with members of other SubGroups in a non-voting status.
- Nomination for membership can be made by any IAB member to the SubGroup/Committee Co-Chairs.
- Members are appointed by a majority vote of the two SubGroup/Committee Co-Chairs and the IAB Chairman.
- Individuals may serve as voting members in only one SubGroup; however they may participate in a non-voting status in other SubGroups.

Execution

The IAB shall conduct its mission during three formal board meetings annually and SubGroup/Committee sessions as needed.

- The first meeting shall consist of requirements development and briefing of R&D initiatives on CBRNE incident response equipment. These requirements will be included in the announcement for the Advanced Concept and Technology Exchange (ACTE).
- The second meeting shall consist of the ACTE to include industry participation.
- The third meeting updates the SEL and prioritizes requirements. These requirements are then forwarded to the FCC.

The IAB is organized into six SubGroups that are chaired by a First Responder, supported by a Federal Co-Chair, and staffed with subject matter experts in that SubGroup's area of interest. Each SubGroup is responsible for maintaining its subsection of the SEL. The Federal Coordinating Committee is the exception as it is chaired with a Federal Chair and composed of supporting federal government representatives. The following IAB Board Structure represents Subgroup and Committee Chairs/Co-Chairs for the 2003 calendar year. For the current IAB Board Structure please visit www.iab.gov.

The InterAgency Board

The IAB Chair is selected from the ranks of the local and state membership. The Chair administers, organizes, and facilitates the actions of the IAB.

IAB CHAIR
Alan "A.D." Vickery, Seattle Fire Department

Federal Coordinating Committee (FCC)

The FCC is a coordination committee that provides the interface between the IAB and sponsoring federal government agencies.

FCC CHAIR
Pete Nacci, Department of Homeland Security, Office for Domestic Preparedness (ODP)

Standards Coordination Committee (SCC)

The SCC ensures that weapons of mass destruction (WMD) response equipment and technology is integrated in the existing standards boards and regulatory bodies.

CO-CHAIR
Stephen N. Foley, National Fire Protection Association (NFPA)

FEDERAL CO-CHAIR
Kathleen M. Higgins, National Institute of Standards & Technology (NIST), Office of Law Enforcement Standards (OLES)

Science and Technology (S&T) Committee

The S&T Committee is focused on advanced concepts entering development and newly emerging technologies that might be applied to crisis and consequence management.

CO-CHAIR
Vincent J. Doherty, Hazardous Material Operations, Fire Department, City of New York (NY)

FEDERAL CO-CHAIR
Gabriel Ramos, Technical Support Working Group

Personal Protective and Operational Equipment SubGroup (PP&OE)

The PP&OE SubGroup addresses individual equipment, support systems, and area protection for WMD response.

CO-CHAIR
Ronald D. Watson, County of Los Angeles (CA) Fire Department

FEDERAL CO-CHAIR
William E. Haskell III, Natick Soldier Center, National Protection Center

InterOperable Communications and Information Systems SubGroup (ICIS)

The ICIS SubGroup deals with communications, information management, technical information support, and public awareness issues.

CO-CHAIR
John P. Sullivan, Emergency Operations Bureau, Los Angeles County (CA) Sheriff's Department

FEDERAL CO-CHAIR
Charles R. Bell, U.S. Marine Corps System Command

Detection and Decontamination SubGroup (D&D)

The D&D SubGroup concentrates on intrusive and non-intrusive detection; monitoring, sampling, and analysis of suspected toxins; and methods to mitigate or dissipate a contamination.

CO-CHAIR
Gene Ryan, City of Chicago (IL) Fire Department

FEDERAL CO-CHAIR
Elaine M. Stewart-Craig, U.S. Army Soldier and Biological Chemical Command (SBCCOM), Edgewood Chemical and Biological Center (ECBC)

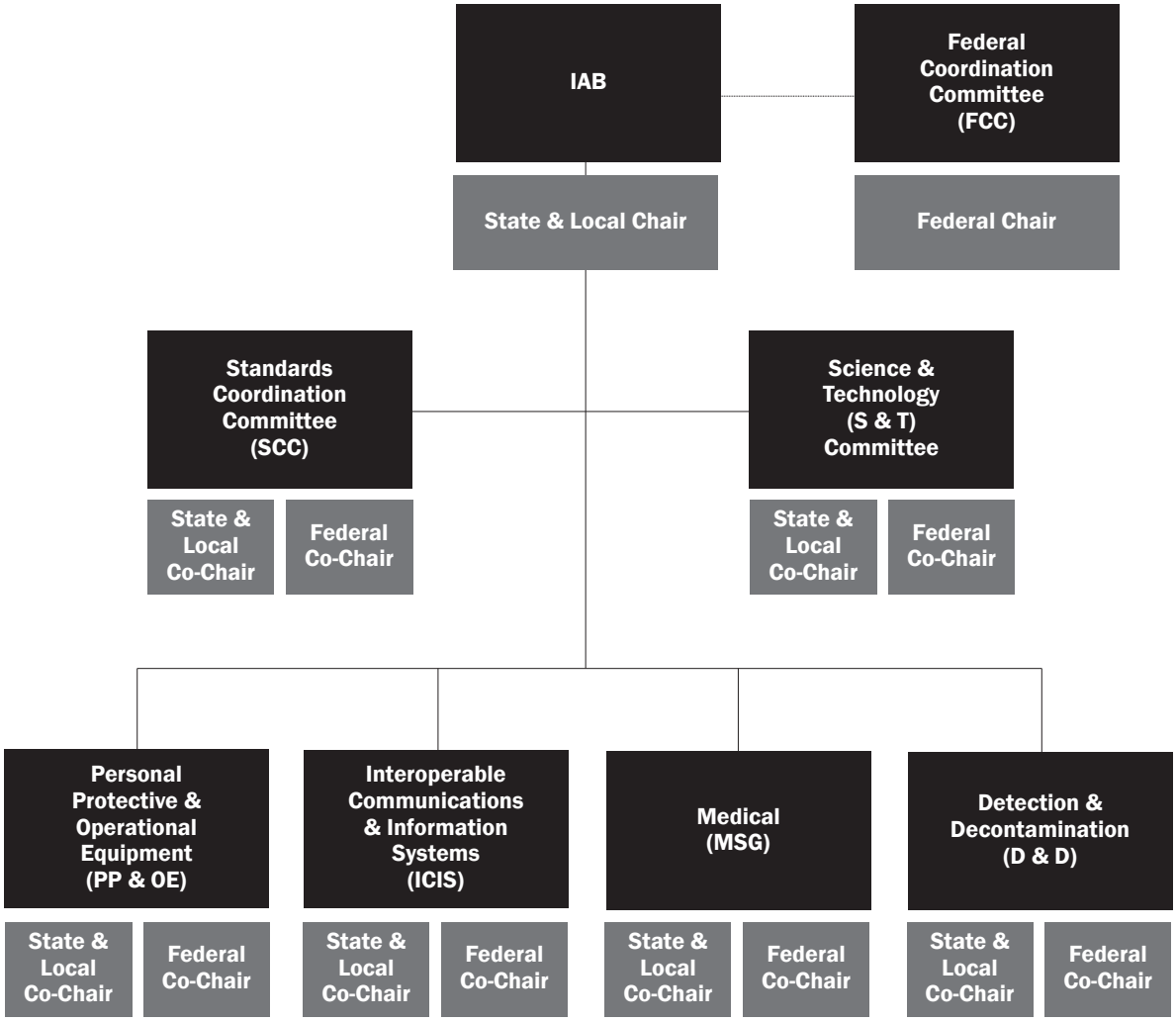
Medical SubGroup (MSG)

The MSG SubGroup engages the issues of casualty treatment for victims of a conventional or non-conventional WMD attack and also preventive measures to avert victimization.

CO-CHAIR
Porter T. Shellhammer, Sarasota County (FL) Fire Department

FEDERAL CO-CHAIR
Paul D. Kim, M.D., U.S. Department of Veterans Affairs, Emergency Management Strategic Healthcare Group

Organization Chart



Federal Coordinating Committee (FCC)

Mission

The Federal Coordinating Committee (FCC) provides the interface between the IAB Chair and the sponsoring federal government agencies. It coordinates the interests and initiatives of the federal community with the first responder community.

Membership

The FCC members include the U.S. Department of Defense (DoD); the National Institute of Standards & Technology, Office of Law Enforcement Standards (NIST/OLES); and the U.S.Department of Homeland Security (DHS) which includes the Office for Domestic Preparedness (ODP), the Science & Technology Directorate, and the Federal Emergency Management Agency (FEMA).

With the formulation of the DHS, the IAB welcomed the newly formed S&T Directorate to the FCC. The S&T Directorate is responsible for all research, development, test, and evaluation within DHS. The S&T Directorate has actively engaged the IAB with respect to understanding current and future technology development priorities for federal, state and local emergency responders.

The National Institute for Occupational Safety and Health (NIOSH) joined the FCC at the end of the year, making it the newest federal partner.

Functions and Roles

The FCC provides the funding for operation of the IAB. Continued multiple federal agency representation allows the IAB to maintain its independence as an organization as well as to best use the resources and expertise of the federal community. Those agencies/departments that fund the IAB have voting rights on the FCC.

Upon unanimous agreement between the federal partners, ODP was appointed as the FCC Chair of the IAB. The DoD, DHS and NIOSH will subsequently serve as FCC Chairs, respectively.

The FCC leverages ongoing federal research, development, standard development, testing, and evaluation (RDT&E) efforts to meet the responder requirements as identified by the IAB. The Chair of the IAB and the FCC work closely to prioritize initiatives within the IAB and the federal community. The FCC also coordinates ongoing IAB initiatives within the federal community to ensure task completion and to prevent duplication of efforts. This interagency relationship benefits both the IAB and the federal community by improving the coordination and integration of efforts to provide equipment and standards for protection and response.

Highlights from 2003 include:

- Increased the IAB Program Office support to the IAB in response to the increased demand for IAB participation within the state, local, federal, and private communities.
- Welcomed two new FCC members; (1) NIOSH and (2) the S&T Directorate within DHS.
- Partnered with the National Memorial Institute for the Prevention of Terrorism (MIPT) to support Project Responder and the Responder Knowledge Base (www.rkb.mipt.org).
- Supported a "new and improved" Standardized Equipment List (SEL) in both a print and electronic format. The 2004 SEL will appear in the 2003 Annual Report and on both the IAB and RKB websites in an electronic format.
- Increased collaboration with the DHS on first responder initiatives and standards development initiatives. The interaction and relationships between the IAB, DHS, and the federal community have positively impacted the first responder community with programs, standards, and guidelines to meet its needs.
- Facilitated the implementation of the IAB's recommendation (to ODP) regarding procurement of equipment for state and local agencies. ODP now recommends that all state and local governments purchase equipment with standards where standards apply.
- Updated the IAB standards development priorities and requirements lists.
- Participated on READY! Advisory Board on behalf of the IAB Chair. IAB Program Office assisted with agenda development for the READY! conference, which included IAB panel discussions and presentations.
- Provided multiple federal agency funding for the continued operation of the IAB.

The FCC continues to work with the SCC to address the IAB's list of priorities with regard to the development of CBRNE equipment standards and to coordinate this development with other public and private standards development organizations, both within and outside of the federal government.

The FCC reviews and approves the annual operating budget for the IAB and maintains a support staff to facilitate operations. The FCC meets with the IAB Chair on a regular basis to review SubGroup recommendations and action items.

Chair

Pete Nacci
Department of Homeland Security, Office for Domestic Preparedness

Membership

Wayne Davis
Department of Defense, Office of the Deputy Assistant to the Secretary of Defense, Chemical/Biological Defense

Les Boord
National Institute for Occupational Safety and Health

Kathleen Higgins
National Institute of Standards & Technology, Office of Law Enforcement Standards

Gil Jamieson
Department of Homeland Security, Federal Emergency Management Agency

Wendy Howe
Department of Homeland Security, Science & Technology Directorate

Nancy Suski
Department of Homeland Security, Science & Technology Directorate

Pete Nacci
Director of the Systems Support Division
Office for Domestic Preparedness

Pete Nacci is Director of the Systems Support Division of the Office for Domestic Preparedness in Washington, DC. He holds a concurrent appointment as a Professor in the Administration of Justice Department at George Mason University. He received his Bachelor's and Master's degrees from Bucknell University in Lewisburg, PA, and his Doctorate in Experimental Social Psychology from the State University of New York at Albany, NY. Before assuming his current position, he had an extensive career in the federal government, including positions as Staff Training Center Director and Director of the Office of Research for the Federal Prison System. He also held positions at the Office for National Drug Control Policy (ONDCP), the National Institute of Corrections, the Senate's Permanent Subcommittee on Investigations. Pete spent 6 years at the National Institute of Justice (NIJ), where he was Co-Chair of the Joint Program Steering Group, and he headed up NIJ's counterterrorism technology development programs. He has published extensively on human aggression, conflict resolution, management, terrorism, and technology. He has taught at major universities at the undergraduate and graduate level and, most recently, taught a course on the public safety response to terrorism at George Mason University. He has drafted legislation, helped craft the national drug policy for corrections for the ONDCP, and has published several book chapters.

Top Officials 2

Exercise Top Officials 2 (T2) was a Congressionally mandated, national weapons of mass destruction (WMD) exercise designed to:

- Improve the nation's capacity to manage complex/extreme terrorism events.
- Create a broader operating framework of expert federal, state, and local (FSL) integrated incident management capability.
- Validate FSL authorities, strategies, plans, policies, procedures, protocols, and synchronized capabilities.
- Build a sustainable, systematic national exercise program to support national domestic preparedness objectives.
- Improve international Top Officials' capability to respond in partnership to the incident management aspects of a WMD terrorist incident.
- Conduct a joint exercise in accordance with the U.S./Canada Smart Border Declaration and Canada/U.S. CBRN Guidelines.

T2 was co-sponsored by the Office for Domestic Preparedness, U.S. Department of Homeland Security, and the U.S. Department of State, and consisted of a series of training seminars, tabletop exercises, and games that built upon one another and enabled participants to immediately implement lessons learned. The President's Cabinet was fully engaged in the program, participating in the Top Officials seminar and playing in the final full-scale exercise (FSE).

The T2 FSE simulated a terrorist campaign with a bioterrorism attack in the State of Illinois and a radiological bomb detonation in the State of Washington. The exercise venues included the City of Chicago and surrounding counties - Cook, DuPage, Kane, and Lake - and the City of Seattle and adjacent King County. Other play took place in the nation's capital, engaging over 25 federal agencies and organizations, and in the District of Columbia, the Commonwealth of Virginia, the State of Maryland, and metropolitan DC counties and cities. The government of Canada, the Province of British Columbia, and the City of Vancouver also participated.

Standards Coordination Committee (SCC)

Mission

The mission of the Standards Coordination Committee (SCC) is to assist other SubGroups in identifying existing standards, facilitating standards development requirements, and to prioritize those requirements. The SCC assists in identifying minimum performance standards and compliance testing programs for the types of CBRNE equipment first responders' need most.

In preparing for possible CBRNE attacks, our nation's emergency response agencies must know more than simply what types of equipment to buy. They have to know which equipment they can trust with their lives and the lives of the citizens they serve. They also need assurance that various types of equipment intended to be used together (for example, CB protective clothing, air-purifying respirators, and radio headsets) are functionally compatible.

For more than 30 years, establishing minimum performance standards for critical equipment and testing available models for compliance with those performance standards has proven the most successful way to give criminal justice and public safety practitioners the objective guidance they need for making informed buying decisions.

Membership

The SCC consists of representatives from federal and private standards development organizations and the SubGroup and Committee Co-Chairs. The Office of Law Enforcement Standards (OLES) at the National Institute of Standards and Technology (NIST) serves as the Committee's Executive Agent, charged with administering, maintaining, and promulgating the CBRNE equipment standards identified for development or adopted by the IAB.

Role and Functions

The SCC's role is to support and coordinate the efforts of the IAB SubGroups on standards development initiatives. Within that role, the SCC performs a number of functions, namely to:

- Review CBRNE equipment performance criteria developed by the Subgroups.
- Identify contradictions among criteria proposed for complementary equipment, as well as contradictions between proposed criteria and existing state and federal regulations.
- Facilitate the conciliation of contradictory criteria.
- Assist the SubGroups in identifying applicable existing standards and related standards development efforts by regulatory, consensus, and voluntary standards organizations.
- Coordinate the SubGroups' CBRNE equipment standards programs with those of other organizations and enforcing authorities, such as NIOSH, National Fire Protection Association (NFPA), Occupational Safety and Health Administration (OSHA), NIJ, Department of Energy (DOE), DHS, Environmental Protection Agency (EPA), ASTM, ANSI, and NIST/OLES.

- Support the development of new standards, when applicable.
- Provide advice on improving existing standards and standards development methods.
- Recommend new regulations and standards for unaddressed equipment.
- Promote harmonization of regulations, standards, and guidelines related to CBRNE emergency response equipment.
- Establish and periodically review priorities for the SubGroups' standards development and standards adoption efforts.
- Develop, maintain, and publish the list of IAB adopted CBRNE protective equipment standards; and develop a schedule for reviewing and revising these standards.
- Research, publish, and regularly update CBRNE equipment guides and equipment care and maintenance guides to assist the emergency response community in selecting, using, and caring for CBRNE equipment.
- Promote equipment interoperability by working in partnership with standards development organizations, trade associations, and manufacturers.

The SCC coordinates CBRNE equipment standards activities within the IAB and links those activities to both outside standards development efforts and the first responder community. The objective is to focus the nation's resources and expertise in a common effort that meets the real-world needs of the emergency response community - while also eliminating unnecessary duplication of effort; addressing critical gaps in standards research, and ensuring both harmony among CBRNE equipment standards and the effectiveness, safety, and interoperability of the equipment itself.

To ensure the highest levels of coordination and cooperation among agencies, the SCC has instituted numerous InterAgency Agreements (IAAs) and Memoranda of Understanding (MOUs) among federal, nonprofit, and private standards agencies, including NIOSH, NIST, OSHA, DoD, NIJ, the U.S. Army's Edgewood Chemical Biological Center (formerly SBCCOM), EPA, DOE, American National Standards Institute (ANSI), and NFPA. These IAAs and MOUs have proven invaluable in launching this nation's CBRNE equipment standards effort and achieving remarkable results in a very brief time.

Co-Chair

Stephen Foley
National Fire Protection Association

Federal Co-Chair

Kathleen Higgins
National Institute of Standards & Technology, Office of Law Enforcement Standards

Membership

Charles Bell
Marine Corps Systems Command

Les Boord
National Institute for Occupational Safety and Health

Vincent Doherty
Fire Department, City of New York (NY)

Jim Gass
National Memorial Institute for the Prevention of Terrorism

Stephan C. Graham
U.S. Army Center for Health Promotion and Preventive Medicine

William Haskell III
U.S. Army Natick Soldier Center, National Protection Center

Wendy Howe
Department of Homeland Security, Science & Technology Directorate

Robert Johns
Department of Homeland Security, Office for Domestic Preparedness

Paul Kim
Department of Veterans Affairs, Emergency Management Strategic Healthcare Group

Philip Mattson
National Institute of Standards & Technology, Office of Law Enforcement Standards

Gabriel Ramos
Technical Support Working Group

Gene Ryan
Chicago (IL) Fire Department

Porter Shellhammer
Sarasota County (FL) Fire Department

Elaine Stewart-Craig
U.S. Army Soldier and Biological Chemical Command, Edgewood Chemical and Biological Center

John Sullivan
Los Angeles County (CA) Sheriff's Department

Ron Watson
Los Angeles County (CA) Fire Department

Initiatives and Progress

Since the publication of the 2002 IAB Annual Report, the SCC has progressed on several fronts. Among the SCC's achievements and initiatives to date are the following:

- Revised the IAB list of standards development priorities.
- Established and strengthened ties with the DHS.
- Assisted in the adoption, development, and implementation of two additional respiratory standards for the IAB's CBRNE equipment standards suite:
  - NIOSH Standard for CBRN Full Facepiece Air Purifying Respirator (APR) (April 2003).
  - NIOSH Standard for CBRN Air-Purifying Escape Respirator and CBRN Self-Contained Escape Respirator (October 2003).
- Facilitated DHS's adoption of NIOSH's CBRN respiratory standards and five NFPA standards.
- Initiated ODP's adoption of the requirement that grants for the purchase of CBRNE equipment be tied to equipment performance standards.
- Initiated the integration of the SEL into the ODP-funded MIPT First Responder Database - an all inclusive resource of information for the public safety community.
- Assisted in the integration of a five-volume series of NIJ Guides for the Selection of Equipment for Emergency Responders into the MIPT first responder website. The five guides focus on:
  - Biological Detection Equipment
  - Chemical Detection Equipment
  - Chemical and Biological Decontamination Equipment
  - Communications Equipment
  - Personal Protective Equipment
- Endorsed free online access (through NFPA's web page) to relevant NFPA standards regarding response, protective clothing and equipment, and CBRNE training.

Ongoing Partnerships

The core success of the SCC lies in its ongoing partnerships throughout the IAB and with outside organizations. These efforts will continue throughout the coming year and include the following:

- Serving as liaison to standards development organizations (SDOs) and other organizations regarding testing methods, certification requirements, and issues of equipment selection, use and care.
- Working with the SubGroups to:
  1) Develop recommendations to industry for increasing compatibility and interoperability of equipment in the SEL
  2) Identify existing standards and specifications that relate to performance criteria for equipment in the SEL
  3) Redefine and revise their standards development priorities to meet changing needs in the emergency response community
- Focusing special effort on identifying existing performance standards and test methods that could be adopted or modified for top-priority equipment.

Priorities in Standards Development

The IAB Strategic Plan assigns the SCC responsibility for setting priorities among the SubGroups' standards programs, based on the needs of the emergency response and public safety communities. At the time this report is being written, the priorities (in descending order) have been established as:

- Respiratory Equipment
- Detection Performance Standards and/or Performance Specifications
  - Chemical Vapor Detection
  - Biological
  - Radiological/Nuclear
  - Explosives
- Protective Clothing/Equipment
- Decontamination Agents, Solutions, Materials, and Equipment
- Interoperable Communications
- Medical Respiratory Ventilators

Considerable work on respiratory equipment standards has been completed. Performance standards for CBRN SCBAs, APRs, and escape hoods have already been developed; and compliance testing programs are in place for SCBAs and APRs. A draft hand held chemical vapor detection standard was completed in FY 2003. More information can be found in the individual SubGroup reports, elsewhere in this report.

The ranking of priorities continually shifts as standards are completed and new ones rise to the top. Changes in threats also affect the ranking. For example, authorities are increasingly concerned about the threat of explosives, and the growing urgency for reliable explosives detection devices in the field could easily push a standard for such devices well up the list.

"Adopted" Protective CBRNE Standards by the IAB

The SCC is responsible for publishing and continually updating the list of CBRNE protective equipment standards officially adopted by the IAB. As of the publication of this annual report, the list, organized by year of publication, is included in the following table.

Standard Title (** indicates newly adopted standard)	IAB Report Adopted
American National Standards Institute (ANSI) Standards	
** ANSI Z89.1 - Protective Headwear for Industrial Workers	** 2003
** ANSI/ISEA 105 - American National Standard for Hand Protection Selection Criteria	** 2003
** ANSI/ISEA 107 - American National Standard for High-Visibility Safety Apparel	** 2003
National Fire Protection Association (NFPA) Standards	
** NFPA 1936 - Standard on Powered Rescue Tool Systems (1999 edition)	** 2003
NFPA 1951 - Protective Ensemble for Urban Search and Rescue Operations (2001 Edition)	2002
** NFPA 1971 - Standard on Protective Ensemble for Structural Fire Fighting (2000 edition)	** 2003
** NFPA 1975 - Station/Work Uniforms for Fire and Emergency Services (2004 edition)	** 2003
** NFPA 1976 - Standard on Protective Ensemble for Proximity Fire Fighting (2000 edition)	** 2003
NFPA 1981 - Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services (2002 Edition)	2002
** NFPA 1982 - Standard on Personal Alert Safety Systems (PASS) (1998 edition)	**2003

National Fire Protection Association (NFPA) Standards - Continued	
** NFPA 1983 - Standard for Fire Service Life Safety Rope and System Components (2001 edition)	** 2003
NFPA 1991 - Vapor Protective Ensemble for Hazardous Materials Emergencies (2000 Edition)	2002
** NFPA 1992 - Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies	** 2003
NFPA 1994 - Protective Ensemble for Chemical/Biological Terrorism Incidents (2001 Edition)	2002
NFPA 1999 - Protective Clothing for Emergency Medical Operations (2003 Edition)	2002
** NFPA 2112 - Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire (2001 edition)	** 2003
National Institute for Occupational Safety and Health (NIOSH) Standards	
NIOSH CBRN Standard for Open-Circuit Self-Contained Breathing Apparatus (December 2001)	2002
** NIOSH Standard for CBRN Full Facepiece Air Purifying Respirator (APR)	** 2003
** NIOSH Standard for CBRN Air-Purifying Escape Respirator and CBRN Self-Contained Escape Respirator (October 2003)	** 2003
National Institute of Justice (NIJ) Standards	
** NIJ Standard 101.04 - Ballistic Resistance of Personal Body Armor (September 2000 edition)	** 2003
Underwriters Laboratory (UL) Standards	
** UL 913 - Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations	** 2003

Near the end of calendar year 2003, the Department of Homeland Security Office for Domestic Preparedness (ODP) incorporated the standards previously adopted by the IAB into their grants programs, directing that federal grants for state and local agency purchase of CBRN equipment be tied to equipment performance standards. Additionally, the Department of Homeland Security Science and Technology Directorate, in February 2004, formally adopted the NIOSH and NFPA standards previously adopted by the IAB. The SCC is especially proud of these efforts.

In addition to the standards adopted by the IAB, a number of other standards are included as "referenced" standards. These referenced standards are included because they may have partial applicability to some aspects of equipment in the SEL, may be of general interest, or in some cases are part of the Code of Federal Regulations. A comprehensive list of the adopted and referenced standards is included at the end of the SEL.

Future Initiatives

The process of developing a minimum equipment performance standard often takes a number of years. This is especially true when, as in the case of CBRNE equipment, the threats involved are new and, until recently, largely unquantified. Nonetheless, progress has been rapid, and the IAB's Sub-Groups have identified the requirements that form the basis of a number of standards programs underway. Those nearest to completion include upcoming NIOSH standards for:

- CBRN Powered Air Purifying Respirators (PAPRs) (December 2004)
- CBRN Air Purifying Respirators (APR) Retrofit Kit (June 2004)
- CBRN Combination SCBA/PAPR (June 2005)
- CBRN Combination SCBA/APR (March 2006)
- CBRN Closed-Circuit SCBA (December 2005)

- CBRN Supplied-Air Respirators (SARs) (September 2006)
- CBRN Combination SCBA/SAR (June 2007)

The Edgewood Chemical and Biological Center continues to conduct essential live agent and stimulant-based research on chemical and biological warfare agents and their effects on the personal protective equipment (PPE) used by emergency responders.

The National Protection Center in Natick, MA, is continuing its study of selectively permeable membrane technology, which has potentially important applications against CBRN agents. The NFPA 1994 Technical Committee is reviewing its standard for ensemble technology in light of this study and expects to publish a revised standard in FY 2006.

In the area of emergency communications, the NFPA is revising *NFPA 1221 -, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*. The revision will address interoperability issues for communications equipment, reverse 911 equipment, and protocols for notification of the public, as well as geographic information system (GIS) interfaces for command and control capabilities. It will also reference the architecture being developed to support the Intelligent Traffic System (ITS) work being done by the U.S. Department of Transportation (DOT).

While not directly linked to the IAB, NFPA, with assistance from the U.S. Fire Administration, is promulgating roles and responsibilities for Command and General Staff positions within the proposed National Incident Command System. This project is establishing Incident Management Teams that can provide local, regional, and national management assistance in the event of a CBRNE incident or other emergency. Response to such multi-agency/multi-jurisdictional incidents requires personnel who are trained in large-scale incident management; and *NFPA 156 - Standard on Emergency Services Incident Management System* - is providing the underpinning for this effort.

NIST/OLES will continue its management of CBRNE standards development efforts, first funded by NIJ in FY 2001 - 02, then by DHS in FY 2003 - 04. Early on, these programs established the health and hazard assessment data since used by NIOSH to develop CBRNE SCBA and APR standards. Now these data, together with information from additional percutaneous assessments, are being used to develop protective ensemble standards and a chemical vapor detector standard.

In 2004 NIST/OLES's management role will be expanded to include standards programs for devices to detect radiological, nuclear, and conventional explosive threats. Special emphasis will be placed on radiation detection equipment, including radiation pagers, portable instrumentation, and portal monitors. Under NIST/OLES's leadership, an intensive effort by DHS, DOE, and NIST's Physics Laboratory will produce a set of radiation detection standards to be published in FY 2004 by ANSI.

The IAB-SCC recognizes the importance of appropriate training for many of the items listed within the SEL. At this time the SCC is recommending performance standards directly relating to equipment items on the SEL. A strategic initiative, was presented at the San Diego meeting in February 2004 that, when applicable, the SEL communicate both the costs and training issues associated with listed items. The feasibility of how to present these recommendations is currently being reviewed. It is anticipated that any training recommendation would be based upon exiting training standards or educational competencies.

In Summary

The importance of standards in preparing for and responding to CBRNE threats cannot be overstated. The IAB's SubGroups are in the vanguard of America's effort to develop critical equipment standards as quickly as possible. By continuing to coordinate the activities of these SubGroups and harmonize them with the efforts of agencies and organizations throughout the public and private sectors, the SCC looks to make its own valuable contribution to the safety of first responders and the security of the United States.

Stephen N. Foley
Senior Fire Service Specialist
National Fire Protection Association

Stephen Foley served the IAB in 2003 from his position as a Senior Fire Service Specialist with the NFPA concurrently responding as an investigator of the NFPA Fire Investigation Response Team. Mr. Foley currently serves as the Acting Director of the U.S. Capitol Police Hazardous Materials Response Team. He has over 26 years of experience in fire service with 12 years as a fire chief, in addition to serving as a senior instructor at the Commonwealth of Massachusetts Fire Academy and Massachusetts State Police Academy. He also serves as an adjunct faculty member at the National Emergency Training Center, Emmitsburg, MD; lectures at the British Fire Service College, and serves on the NFPA 472 Technical Committee for Hazardous Materials Response Personnel. Mr. Foley holds a Bachelor's degree in Fire Science Administration and a Master's degree in Management, is a graduate member of the Institution of Fire Engineers, and is a graduate of both the Executive Fire Officer Program at the National Fire Academy and the Senior Executive Program at the Kennedy School of Government at Harvard University. Mr. Foley has authored fire service books on occupational safety and health, incident command systems, and emergency service organization and deployment.

Kathleen M. Higgins
Director, Office of Law Enforcement Standards
National Institute of Standards and Technology

Kathleen M. Higgins, Director, NIST/OLES is a graduate of the University of Rhode Island, with a B.S. in chemistry. Following college, Ms. Higgins worked as a toxicologist in the RI Department of Health. She earned a Master's degree in Forensic Chemistry at Northeastern University, did course work at Brown University in the fields of drug abuse and medical-legal autopsies, and co-founded a private forensic laboratory in Boston. Ms. Higgins also lectured at the Massachusetts Criminal Justice Training Center at Northeastern University, where she was coordinator of forensic programs. She managed material-development programs for the U.S. Postal Service Engineering and Development Center before joining NIST. Ms. Higgins is the author of several forensic science journal articles; a Fellow of the American Academy of Forensic Sciences; Past President of the Massachusetts Chapter of the International Association of Arson Investigators; and a member of several professional organizations, including the American Society for Testing and Materials (ASTM) E54 Committee on Homeland Security Applications (Chair), the ASTM E30 Committee on Forensic Science (Recording Secretary), the International Association for Identification, the National Fire Protection Association, the International Association of Bomb Technicians and Investigators, and the International Association of Chiefs of Police.

Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction (Gilmore Commission)

The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, commonly referred to as the Gilmore Commission, was established by Section 1404 of the National Defense Authorization Act of 1999. The Act directed the Advisory Panel to accomplish several specific tasks including:

- Assessing federal agency efforts to enhance domestic preparedness for incidents involving weapons of mass destruction
- Assessing the progress of federal training programs for local emergency responses to incidents involving weapons of mass destruction
- Assessing deficiencies in programs for response to incidents involving weapons of mass destruction, including a review of unfunded communications, equipment, and planning requirements, and the needs of maritime regions
- Recommending strategies for ensuring effective coordination with respect to federal agency weapons of mass destruction response efforts, and for ensuring fully effective local response capabilities for weapons of mass destruction incidents
- Assessing the appropriate roles of state and local government in funding effective local response capabilities.

The Act required the Advisory Panel to report its findings, conclusions, and recommendations for improving federal, state, and local domestic emergency preparedness to respond to incidents involving weapons of mass destruction to the President and Congress. Originally enacted for 1999, 2000, and 2001, the Advisory Panel's tenure was extended for 2 years with its final report submission on December 15, 2003.

Science & Technology (S&T) Committee

Mission

The S&T Committee's mission it to identify interagency (federal, state, and local) first responder research and development (R&D) requirements and innovative technologies (fieldable in the next 6 months to 5 years) that address CBRNE detection, individual protection, collective protection, medical support, decontamination, communications systems, information technology, and miscellaneous operational support.

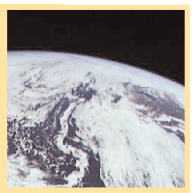
Function and Roles

The primary functions of the S&T Committee are to develop and update the IAB S&T Requirements Matrix for inclusion in the SEL, coordinate IAB representation on federal requirements boards, record and collate requirements of individual SubGroups, report to SubGroups on federal requirement initiatives, and assess innovative government and industry-developed technologies. The IAB S&T Requirements Matrix identifies future technology needs for detection, individual protection, collective protection, medical support, decontamination, communications systems, information technology, and operational equipment (Appendix B).

Initiatives and Progress in 2003

During the year, the S&T Committee accomplished the following:

- Designated Subgroup Chairs as mission area leaders responsible for detailed review and prioritization of S&T needs and projects.
- Reviewed the draft 2004 SEL to ensure future needs were included in the S&T Requirements Matrix.
- Reconciled the S&T Requirements Matrix with previous federal Interagency R&D requirements efforts.
- Updated the S&T Requirements Matrix for publication in the annual report.
- Prioritized SubGroup requirements for industrial and federal partners.
- Coordinated input into Federal Requirements meetings to leverage IAB-prioritized requirements submissions.



Ongoing Initiatives in 2004

Establish an "innovative technologies" reference database that provides information on type of emerging technical advances, status of development, industry or government source, and possible need for new standards development because of the emerging technology. The guide will cover the eight focus areas within S&T and will receive input from designated subgroup chairs.

Co-Chair

Vincent J. Doherty
Fire Department, City of New York (NY)

Federal Co-Chair

Gabriel Ramos
Technical Support Working Group

Membership

Charles Bell
U.S. Marine Corps Systems Command

Brett Burdick
Virginia Department of Emergency Management

William Haskell III
U.S. Army Natick Soldier Center, National Protection Center

Wendy Howe
Department of Homeland Security, Science & Technology Directorate

Paul Kim
Department of Veterans Affairs, Emergency Management Strategic Healthcare Group

Philip Mattson
National Institute of Standards & Technology, Office of Law Enforcement Standards

Gene Ryan
Chicago (IL) Fire Department

Porter Shellhammer
Sarasota County (FL) Fire Department

Elaine Stewart-Craig
U.S. Army Soldier and Biological Chemical Command, Edgewood Chemical and Biological Center

John Sullivan
Los Angeles County (CA) Sheriff's Department

Nancy Suski
Department of Homeland Security, Science & Technology Directorate

Ron Watson
Los Angeles County (CA) Fire Department

The following matrix is a sampling of completed and on going efforts to address the first responder requirements to improve their response to current and future threats and improve our Homeland Security. Further information can be obtained on the IAB website, www.IAB.org

Standards Coordination Committee (SCC)		
Requirement (General)	**Project (Specific)**	**Agency**
STANDARDS COORDINATION COMMITTEE		
Pursue standards for chemical, biological and radiological detection equipment	Escape Hood Testing	TSWG
Pursue standard testing for all air respirators, APRs, PAPRs, SCBA		
Pursue standard testing for escape masks		
Develop standards for cyber security applications		
Physical protection applications for infrastructure cyber-terrorism		
Vulnerability chains for critical digital assets		

Personal Protection & Operational Equipment (PP&OE)		
Requirement (General)	**Project (Specific)**	**Agency**
PERSONAL PROTECTION & OPERATIONAL EQUIPMENT		
Increased respirator protection factors	Land Warrior project	Army Natick Labs & MIT
Improved flexibility of protective clothing	Nanomaterial and nano-technology research and development	MIT, Raytheon, Dupont and CIMIT
Decreased heat build-up of protective clothing		
Skin protectants	Next generation of turn-out gear for fire service	TSWG
Respiratory protection for downwind hazard victims	Drink System for Powered Air Purifying respirator (PAPR) and Self Contained Breathing Apparatus (SCBA)	TSWG
Multi-purpose canister/cartridge designs that offer appropriate levels of respiratory protection against TICs, TIMs, CWAs and airborne biological threat agents		
Lightweight, low-cost personal cooling capability that offers cooling capability for duration > 2 - hour for use with CPC		
Lightweight, low-cost PPE tailored for Law Enforcement		
Lightweight, low-cost PPE tailored for medical personnel in treatment facilities		
Next generation Level "A" Chemical Protective Ensembles, lightweight, increased protection		
Next-generation firefighter bunker gear (turnout coat, bunker pants, gloves, and boots) systems that offer appropriate protection against chemical agents		
COLLECTIVE PROTECTION		
Absorptive & regenerative air filtration for public facility HVAC systems		

Interoperable Communications and Information Systems (ICIS)		
Requirement (General)	**Project (Specific)**	**Agency**
INTEROPERABLE COMMUNICATIONS & INFORMATION SYSTEMS		
Improved, interoperable communications systems		
Tactical Telemetry (sensor array)		
Cyber security initiatives		
INFORMATION TECHNOLOGY		
User-friendly, multimedia hazard assessment tool		
Computer models for predicting casualties following combined exposure to low levels of ionizing radiation and biological warfare/ C WA aerosols		
Computer models for determining location of chemical, biological dispersal device based on limited point detection data		

Detection & Decontamination (D&D)		
Requirement (General)	**Project (Specific)**	**Agency**
DECONTAMINATION		
Mass, gross decontamination protocols	Mass personnel decontamination protocols	TSWG (available)
Non-aqueous decontamination Methods and Materials	Enzymatic decontamination Ultraviolet light for biologicals High pressure steam Supercritical steam	SBCCOM MIT Army's Edgewood Arsenal
Non-liquid decontamination methods and materials	Disinfection byproducts Database	
Decontamination of difficult to replace equipment		
Medically safe decontamination solutions		
Mass personnel decontamination with high velocity throughput, even in cold weather environments		
Low-cost contamination containment vessels		
Multi-hazard decontamination solution for chem/bio		
Radiological decontamination methods and materials		
High-temperature, high-volume, portable incinerators for chemical and biologically infected animal and contaminated material cremation		
Sensor technology for decon assurance		
Decon medical standards, in the absence of a process to establish standards, a panel of SME's be convened to suggest interim levels of acceptable contamination (e.g. ALARA for asbestos contamination)		
DETECTION (Chemical)		
Reduced size & cost of sample collection devices		
Minute sample collection capability	Laser-photoacoustic	
Non-intrusive agent detection		
Broad spectrum agent detection		
Personal dosimeter		
Pager size alarming detectors (CBR)		
Stand-off detectors		

Detection & Decontamination (D&D) - Continued		
Requirement (General)	**Project (Specific)**	**Agency**
DETECTION (Biological)		
Reduced size & cost of sample collection devices		
Minute sample collection capability		
Non-intrusive agent detection		
Broad spectrum agent detection		
DETECTION (Radiological)		
Reduced size and cost of sample devices	Self indicating, low cost, radiation Dosimeter	
Minute sample collection capability		
Non-intrusive agent detection		
Broad spectrum agent detection		
EXPLOSIVES		
Non-intrusive, remote explosives detection		
CBRNE, non-pass alert SCBA for non-fire agencies		
OTHER		
Reduce power requirements and battery weight to improve systems size/weight		

Medical		
Requirement (General)	**Project (Specific)**	**Agency**
MEDICAL		
	Biodosimetry Assessment Tool (BAT) Integration	TSWG
	Building disinfection byproducts Database	Armed Forces Radiobiology Research Institute (AFRRI)

Miscellaneous		
Requirement (General)	**Project (Specific)**	**Agency**
MISCELLANEOUS		
Joint Maritime Awareness System (JUMPS)	CB Building Improvement Design Protocols	TSWG
Automate Nuclear Power Reactor Cyber Assessment	Expedient Chemical/Biological Release Mitigation	TSWG
Operational Security Metrics		
Classification Scheme for Critical Infrastructure Assessment	Portable Modular Filtration Unit for small, enclosed spaces	TSWG
Wide Area Metal Detection (WAMD)	WMD Panic Response Operations (WMD-PRO) Course	TSWG
Improved Patch Authentication, Testing and Dissemination	Food Protection and Security Training for Critical and Overseas Facilities	TSWG
High-Impact Open Source Cyber Securities Technologies	Irradiation of Suspect Luggage	TSWG
Railroad Bridge & Tunnel IDS System		
Centralized Security Event Auditing Tool (C-SEAT)		
Evolving and New Anti-Virus architectures		
Secure Universal Maintenance Platforms (SUMPs)		
Biometrics to Support Logical Access		
Passive Network Mapping Tool		
Detection of Novel Attacks Against Public Servers		

Vincent J. Doherty
Executive Officer of HAZMAT Operations
Fire Department, City of New York

Vincent J. Doherty, Captain, is a 23-year veteran of the Fire Department of New York (FDNY) and is presently the Executive Officer of HazMat Operations and the former Company Commander of Hazardous Materials Company 1 (HazMat 1), the premier hazmat response unit for NYC. Captain Doherty holds a Bachelor of Science degree from St. John's University and is currently pursuing a Master's Degree in Homeland Security from the Naval Post-graduate School, Monterey, CA. Prior to joining the Fire Service in 1981, Captain Doherty was a Research Chemist for Fisher Scientific, Diagnostics Division, in Orangeburg, NY. He is a contract instructor for the International Association of Fire Fighters, National Fire Academy, CRA, and the FDNY Fire Academy. Captain Doherty has been the Co-Chair of the S&T Committee of the IAB since 2000 and is a member of New York City's FEMA Urban Search and Rescue (US&R) Task Force 1.

Gabriel Ramos
Chemical Biological Program Manager
Technical Support Working Group

Mr. Ramos is a Program Manager for the Technical Support Working Group (TSWG). He provides management and technical oversight for the execution of the TSWG Chemical, Biological, Radiological, and Nuclear (CBRN) Counter-measures rapid research and development program. Mr. Ramos has over 17 years of experience developing and evaluating chemical/biological capabilities for the Department of Defense and the federal interagency Combating Terrorism community. Mr. Ramos received his Bachelor of Science degree in Chemical Engineering from the Polytechnic University, Brooklyn NY. Mr. Ramos is also a graduate of the U.S. Army School of Engineering Logistics Product/Production Engineering Program.

National Memorial Institute for the Prevention of Terrorism (MIPT)

The National Memorial Institute for the Prevention of Terrorism (MIPT) in Oklahoma City was created as a living memorial to those who were killed, those who survived, and those who were changed forever by the Murrah Federal Building bombing on April 19, 1995. The Institute was enacted into Public Law in 1999 and is funded through the Office for Domestic Preparedness, Department of Homeland Security. MIPT has been a member and active supporter of the IAB for 4 years.

MIPT seeks to prevent terrorism or mitigate its effects by assisting and supporting the emergency response community. In support of this goal, MIPT has launched several key research and knowledgebase efforts. One is the development of a national Best Practices/Lessons Learned capability called Lessons Learned Information System (LLIS). Many lessons learned - and resulting improved practices - have not been consolidated anywhere in the world, much less made electronically accessible. LLIS remedies this problem by providing emergency responders and officials a cost-effective way to share and learn from past experiences and improve the quality of their efforts. LLIS is available to emergency responders at www.llis.gov.

Another key MIPT effort, Project Responder, informs and helps provide focus to federal counterterrorism research and development on the most urgent emergency responder equipment requirements by comparing responder capability needs with existing or near-term technologies and identifying gaps requiring longer range research. This project also matches off-the-shelf technologies with the standard and authorized equipment lists and combines this information into a web-based database, known as the Responder Knowledge Base (RKB). Because of the RKB's user friendly design, emergency response agencies can simplify their search for products that are on equipment lists, have been tested or certified to existing standards by third-party organizations, and have been evaluated by the other response personnel.

In addition to these core projects, MIPT is working with researchers to develop various tools for emergency responders. A few examples are: a next-generation cooling vest; selectively permeable membrane personal protective clothing to provide CB protection; a prototype "lab-on-a-chip" handheld sensor capable of detecting and identifying explosives and several types of chemical agents in one system; and a capability to neutralize explosives "in situ" (on scene). Information on the full scope of MIPT's multiple research and knowledgebase efforts may be found at http://www.mipt.org.

Personal Protective & Operating Equipment (PP&OE) SubGroup



Mission

The Personal Protective & Operational Equipment (PP&OE) SubGroup has the challenging mission of addressing issues of personal protective and operational equipment standardization and interoperability, and making recommendations for this equipment based upon anticipated hazards, risk assessment, and job functions. Personal protective equipment encompasses both protective ensembles (garments, boots, gloves, hood, and respiratory protection) and operational equipment (equipment and references needed to sustain operations and provide general support during CBRNE response operations). The PP&OE SubGroup efforts must be closely coordinated with those of the other IAB SubGroups, especially the SCC.

Function and Roles

The PP&OE SubGroup is actively involved with or supports the development of personal protective equipment performance criteria and standards. Members of the PP&OE SubGroup are also members of the IAB SCC, the National Institute of Standards and Technology (NIST), the National Fire Protection Association (NFPA) fire and emergency services protective clothing and equipment committees and various committees of the ASTM International (formerly the American Society for Testing and Materials). These dual memberships serve to enhance partnerships between local, state, federal, military, and professional agencies and organizations and standards development organizations. Through these partnerships, protective clothing, equipment, expertise, and technologies are being developed. Ongoing federal and military research and development programs are being leveraged for the benefit of the emergency response and public safety community.

Initiatives and Progress

A major milestone was achieved in the past year, with the adoption by the Department of Homeland Security (DHS) of the protective equipment standards adopted by the IAB in the previous report. The standards previously adopted by IAB and subsequently adopted by DHS included the following:

- NIOSH Chemical, Biological, Radiological and Nuclear (CBRN) Standard for Open-Circuit Self-Contained Breathing Apparatus (December 2001)
- NFPA 1951 Standard on Protective Ensemble for USAR Operations (2001 edition)
- NFPA 1981 Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services (2002 edition)

- NFPA 1991 Standard on Vapor-Protective Ensemble for Hazardous Materials Emergencies (2000 edition)
- NFPA 1994 Standard on Protective Ensemble for Chemical/Biological Terrorism Incidents (2001 edition)
- NFPA 1999 Standard on Protective Clothing for Emergency Medical Operations (2003 edition)

Additionally, DHS adopted the NIOSH CBRN Air Purifying Respirator (APR) standard, and the CBRN APR and Self-Contained Escape Respirator standards that had been implemented by NIOSH since the last IAB annual report, and are recommended for adoption by the IAB in this report. The NIOSH SCBA standard and these NFPA standards had already been incorporated into the FY 2004 ODP Homeland Security Grant Program (HSGP). These events validate the efforts of the PP&OE SubGroup and the IAB as an organization.

In the past year, a number of key PP&OE initiatives provided dramatic results. These success stories include the following:

- The restructure of the 2002 PPE section of the SEL to include threat categories and the standards table resulted in the structure of the SEL as reflected in this report.
- The development of the responder mission areas as reflected in this report was also initiated through the PP&OE subgroup.
- The PP&OE SubGroup has worked directly in support of the Memorial Institute for the Prevention of Terrorism (MIPT) and the Responder Knowledge Base. This collaboration has facilitated the integration of the SEL into a web-based tool. This will also facilitate the incorporation of the NIJ Equipment Guides into the Knowledge Base. Many representatives from the IAB and the PP&OE SubGroup have contributed to his effort.
- In 2003 the Technical Support Working Group (TSWG) included a requirement for Next Generation Fire Fighter Structural Ensemble in its Broad Area Announcement (BAA) that was conducted for DHS. This requirement was developed by the PP&OE SubGroup, submitted to the S&T Committee, and then picked up by the TSWG CBRNE Countermeasures Subgroup. One contract has been awarded as a result of this initiative, and another is in the negotiation phase.

Co-Chair

Ron Watson
Los Angeles County (CA) Fire Department

Federal Co-Chair

William Haskell III
U.S. Army Natick Soldier Center, National Protection Center

Membership

Armando Bevelacqua
Orlando (FL) Fire Department

Bill Chandler
Hennepin (MN) Sheriff's Office in Minneapolis

Wayne Davis
Department of Defense, Office of the Deputy Assistant to the Secretary of Defense, Chemical/Biological Defense

Richard Duffy
International Association of Fire Fighters

Tim Gallagher
Texas A&M/Urban Search & Rescue

John Hancock
Department of Veterans Affairs

Jim Hanzalik
U.S. Coast Guard, National Strike Force

Eric Imhof
Contra Costa County (CA) Office of the Sheriff, Homeland Security Office

Glenn Jirka
Miami Township (OH) Fire Protection Division

Scott Larson
Minneapolis Bomb Squad/National Bomb Squad Commanders Advisory Board

Jeff Marcus
Los Angeles City (CA) Fire Department

Philip Mattson
National Institute of Standards & Technology, Office of Law Enforcement Standards

Ron Olin
Lawrence (KA) Police Department

Richard Reddy
Boise (ID) Fire Department

Irene Richardson
U.S. Army Center for Health Promotion and Preventative Medicine

Bruce Teele
National Fire Protection Association

Douglas Wolfe
Sarasota County (FL) Fire Department

* = Subject Matter Experts

* Jeff Stull, International Personnel Protection

* Les Boord, National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory

* Martin Hutchings, Sacramento County (CA) Sheriff Bomb Squad

The PP&OE SubGroup continues to diligently address a number of issues specific to WMD/CBRNE within its particular scope and discipline. The following are the initiatives that have been identified by the PP&OE SubGroup for action during the 2004 - 2005 calendar years:

- Develop a cross-walk that addresses the relationship between the nomenclature "Levels A, B, C, and D" and the standards found in NFPA 1991, 1992, and 1994 for protective ensembles. This cross-walk would result in a better understanding of the capabilities and limitations of the standards based ensembles.
- Provide greater information to the SEL user as to the operational considerations for any piece of equipment listed in the SEL by the PP&OE SubGroup.
- Where applicable, incorporate within the SEL guidance regarding existing performance based training and educational objectives that may be related to the listed item. This guidance should, when feasible, describe anticipated human resource impacts such as training hours.
- Working in conjunction with other IAB SubGroups, develop a means to communicate to the SEL user the approximate purchase and annual maintenance cost of the listed items.

Recommendations for Adoption of Standards

During the San Diego meeting of March 2004, the PP&OE SubGroup recommended to the IAB numerous standards for adoption. Each of these standards is directly applicable to items that were listed in the 2004 edition of the Standardized Equipment List.

The standards recommended for IAB adoption are:

Standard	Title
NFPA 1936	Standard on Powered Rescue Tool Systems, 1999 edition
NFPA 1971	Standard on Protective Ensemble for Structural Fire Fighting, 2000 edition
NFPA 1975	Station/Work Uniforms for Fire and Emergency Services, 2004 edition
NFPA 1976	Standard on Protective Ensemble for Proximity Fire Fighting, 2000 edition
NFPA 1982	Standard on Personal Alert Safety Systems (PASS), 1998 edition
NFPA 1983	Standard for Fire Service Life Safety Rope and System Components, 2001 edition
NFPA 1992	Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies
NFPA 2112	Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire, 2001 edition
ANSI Z89.1	Protective Headwear for Industrial Workers
ANSI/ISEA 105	American National Standard for Hand Protection Selection Criteria
ANSI/ISEA 107	American National Standard for High-Visibility Safety Apparel

The adoption of these standards serves to further clarify the necessity of communities and responders to purchase equipment that has demonstrated the ability to protect our personnel. It will also serve to send a clear signal to manufacturers that only protective equipment of the highest quality will be considered. The PP&OE SubGroup encourages manufacturers to participate in standards development/revision for equipment that has such established guidance and equipment that does not.

Standards for use as Reference

In addition to the standards recommended to the IAB for adoption, the PP&OE SubGroup referenced multiple standards that impact the use and application of many equipment items that appear on the SEL. These suggested "reference" standards or, in some cases, guidance documents, will serve to further assist the end user in assessing the impacts of implementing many of the list items. These standards are noted in the SEL.

Standards Development Gaps or Recommendations

The PP&OE SubGroup has identified several areas in which guidance or standards development should be sought. Those primary areas of concern include:

- The amount of information available related to dermal (skin) toxicity is very limited for toxic industrial chemicals. There is considerably more data available related to the inhalation route of entry for industrial chemicals with values such as Immediately Dangerous to Life and Health (IDLH) and Acute Exposure Guideline Levels (AEGL). A great deal of research is recommended for generating dermal toxicity values for toxic industrial chemicals. This type of data would be valuable in the determination of appropriate protection levels for personal protective equipment (PPE) that is not overly conservative. This data would also be a valuable to emergency responders in the selection of appropriate levels of protection incident hazard assessment and risk analysis during incident response.
- New materials technologies are being developed that offer advantages to non-permeable, barrier type materials used in hazardous materials response ensembles. These include semi and selectively permeable materials offer breathability and enhanced mission performance though the management of heat stress. The emergency responds community is also investigating the use of commercial variations to military “carbon” protective clothing for WMD response. The PP&OE Subgroup recommends that currently used materials permeation resistance (swatch) testing methods be evaluated and modified to handle these types of PPE technologies for the types of threats and challenge levels that could be experienced during a WMD incident. ASTM F739 and currently used military swatch test protocols should be used as a starting point in this process. A primary objective should also be the development of a swatch test method that can easily be conducted at both military and private testing laboratories at an affordable cost.
- The military uses the Man In Simulant Test (MIST) to determine an ensembles protection level to chemical vapor threats. This type of ensemble systems level test is not currently used in certification process of emergency responder PPE. It is recommended by the PP&OE Subgroup that the MIST test method be formerly submitted to the appropriate ASTM committee and review and adoption as an ASTM test method. This successful completion of this process will facilitate the inclusion of this “systems” test info NFPA and other federal agency performance and certification standards. A similar process should be considered for the aerosol threat systems level test also being used by military.
- The need for development of standards for explosive device mitigation equipment.
- A large number of different types of personal cooling garment products are being marketed to emergency responders with the promise of minimizing the effects of heat stress on human performance. These include ice based, phase change materials, and circulating liquid cooling vest products. The PP&OE Subgroup recommends that the military approach to testing the performance of commercial cooling garments be applied to personal cooling products being used by responders. The military also has validated human performance models based on military type work rates with data gathered from military personal. It is recommended that an effort be undertaken to gather physiological performance data from a population of emergency responders and validate this performance model for use by the emergency responds community and also manufacturers of responder PPE.
- A "job aid" or guidance document should be developed to assist responders in the proper selection of protective ensembles. It is suggested that the ASTM E54 committee evaluate this project for possible completion.

- A document should be developed that does a cross walk between the Level A, B, C and D protective ensembles, and NFPA Standard 1991 and 1994 ensembles. There is confusion throughout the responder community about the meaning of these terms. This document would be developed in coordination with NFPA, IAFF, FEMA, OSHA, and other appropriate agencies.

Recommendations of Subsequent Respirator Standards Development

NISH and OLES requested that the PP&OE SubGroup provide recommendations for the order and priority of development for the remaining types of CBRN respiratory protection equipment. The recommendations of the PP&OE SubGroup are as follows:

- Combination SCBA/PAPR
- Combination SCBA/APR
- Closed-Circuit SCBA
- Supplied Air Respirator (SAR)
- Combination SCBA/SAR

Recommendations for Equipment Evaluations

The Office for Domestic Preparedness is managing the Systems Assessment/Validation for Emergency Responders (SAVER) Program. Comparative evaluations of selected types of emergency responder equipment will be conducted as a component of this program. The PP&OE SubGroup recommends the following items of equipment be considered as candidates for evaluation as part of the SAVER Program:

- Thermal and light enhancement optics
- Glove dexterity
- Interchangeability of APR filter canisters with face pieces from different manufacturers
- Evaluation of NFPA 1994 ensembles for characteristics such as comfort, durability, sizing, cost, etc.

The PP&OE SubGroup recognizes that these evaluations are not compliance or certification testing, but rather will provide the community some additional useful information for use in making procurement decisions.

First Responder CBRNE Protective and Operational Equipment Standards Development Program

The NIST/OLES has been managing a program to develop a suite of performance standards for emergency response and public safety community since 1999. OLES also serves as the Secretariat for the IAB Standards Coordination Committee. A team was established between NIST, NIOSH, Edgewood Chemical and Biological Center (ECBC),and the U.S. Army National Protection Center (NPC) to develop these standards in coordination with various standards development organizations. This program was initially funded by NIJ until the funding was transferred to ODP in FY 2003. The NIOSH CBRN standards were developed through this program. The major tasks that are currently being funded by ODP in FY2003 that pertain directly to PPE are as follows:

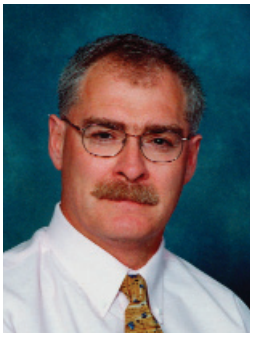
- Development of Respirator Standards for Chemical, Biological, and Radiological Agents. Currently the PAPR standard is under development.

- Development of PPE and Membrane Technology Standards for Chemical and Biological Agents. This effort is being conducted at ECBC and NPC. The results of this program are being incorporated into NFPA standards development where applicable.
- Development of a Bomb Suit Standard. This project is jointly funded by DHS and NIJ, and the work is being conducted at NPC.

The funding for this program is being transferred from ODP to the DHS S&T Directorate in FY 2004. The scope and direction of the program will remain unchanged as a result of the transfer. The recommendations and priorities listed by the PP&OE SubGroup are a critical component in the development and structure of this program and will be incorporated into the future development of the program.

Ronald D. Watson
Battalion Chief
Los Angeles County Fire Department

Battalion Chief Ron Watson is a 20-year veteran of the Los Angeles County Fire Department. During that time he has worked as a firefighter, paramedic, apparatus engineer, captain, and battalion chief. He has a background in fire ground operations, special operations, hazardous materials, fire prevention, communications, and command and control. Chief Watson's present responsibilities include that of Terrorism Preparedness Program Advisor for the Los Angeles County Fire Department, focusing on training and equipping all Department members in preparation for incidents involving weapons of mass destruction. Chief Watson holds a Bachelor's Degree in Fire Administration and Public Administration. He is a member of the Los Angeles County Terrorism Early Warning (TEW) Group and the Los Angeles County Operational Area Terrorism Working Group (TWG). Chief Watson has held the post of Local and State Chair of the PP&OE SubGroup since the 1998 inception of the IAB.



William Haskell III
Physical Scientist
U.S. Army Natick Soldier Center

William E. Haskell III was a staff member at the U.S. Army Natick Soldier Center up until October 2003. Prior to that date, he was the Federal Co-Chair of the IAB PP&OE Subgroup. His areas of expertise include military and emergency responder personal protective technologies and equipment for threats and hazards including ballistic, explosive, thermal, weapons of mass destruction, and extreme environments. Mr. Haskell received an undergraduate degree in Civil Engineering (1978) and a Master of Science in Plastics and Textiles Engineering (1981) from the University of Massachusetts at Lowell. He is a voting member of the NFPA Technical Correlating Committee on Fire and Emergency Services Protective Clothing and Equipment.

The Responder Knowledge Base

The Responder Knowledge Base (RKB) project began in mid-2002 as part of Project Responder, sponsored by the Oklahoma City National Memorial Institute for the Prevention of Terrorism (MIPT). During the course of its needs assessment research, the Project Responder team received a clear message from the responder community that a central source for reliable equipment information was needed. In response, the RKB was chartered with the following mission:

To provide Emergency Responders, purchasers, and planners with a trusted, integrated, on-line source of information on products, standards, certifications, grants, and other equipment-related information.

The RKB provides Emergency Responders with a single source for integrated information on current equipment, including key information such as the InterAgency Board's Standardized Equipment List (SEL) and the Authorized Equipment List (AEL). As its data content increases, the RKB will become a "one-stop shop" for the responder community to answer questions such as:

- What equipment is out there? (including searches using the SEL and AEL)
- Has it been certified?
- To what standard?
- What training is needed to use it?
- How do I pay for it?
- Who has used it and can I talk to them?

In operation, the RKB is based upon the relationships, or "knowledge links" among various types of content items (products, standards, grants, etc.). Users can start by searching the entire site, or any of the content areas. Upon reaching any specific item, the user can then "navigate" by following the knowledge links displayed at the right of each item's screen. For example, the knowledge links on a particular mask might include a link to a certification record for that mask, or a link to the appropriate SEL item. Registered professional responders will also have the ability to contact other responders who have had operational experience with listed products, or volunteer to share their own experiences.

The RKB began public operation on October 31, 2003, and its data content is growing steadily. All responders are encouraged to visit the site at http://www.rkb.mipt.org.

THE RESPONDER KNOWLEDGE BASE TEAM

Sponsored by the Oklahoma City National Memorial Institute for the Prevention of Terrorism (www.mipt.org)
Prime Contractor: Hicks & Associates (www.hicksandassociates.com)
RKB Functional Development: Terrorism Research Center, Inc. (www.terrorism.com)
RKB Technical Development: Computer Sciences Corporation (www.csc.com)

Supported under Award Number MIPT106-113-2000-002, Project Responder from the National Memorial Institute for the Prevention of Terrorism (MIPT) and the Office of Domestic Preparedness, Department of Homeland Security.

Interoperable Communications & Information Systems (ICIS) SubGroup

Mission

The ICIS SubGroup's mission is to identify available equipment/systems and short-falls for the coordination and exchange of information (both voice communications and data) before during and after a potential terrorist event using CBRNE or other means. Communications and information sharing in their many forms are the elements that tie together all of the diverse response organizations and disciplines required to address contemporary terrorism threats and perform vital homeland security missions.

Functions and Roles

A high degree of interaction among the ICIS SubGroup, other IAB SubGroups and Committees, and the user and technology development communities is required to address the diverse needs of incident responders at all phases of operations (pre and post-attack). Within the ICIS SubGroup, John Sullivan continues to serve as State/Local Co-Chair and Charlie Bell continues to serve as Federal Co-Chair. To effectively meet its broad mandate, the ICIS SubGroup reorganized this year, adding a new Incident Management section to the pre-existing Communications and C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) sections to form three mutually supporting sections to address vital ICIS mission areas.

The Incident Management team is new and was created upon direction of the IAB Co-Chairs/Standards Coordination Committee with the assent of the IAB Chair (A.D. Vickery). Leo Guilmette continues as Communications Team Leader, Joey Booth continues as C4ISR Team Leader, and Amy Donahue will assume the new position of Team Leader for Incident Management.

Incident Management

With the advent of the new National Incident Management System and the National Response Plan, incident management is a particularly dynamic area of homeland security policy. Equipment configurations and standards, with which the IAB is predominantly concerned, fundamentally enable responders to manage incidents. The purpose of a focus area in incident management is to facilitate consideration of equipment issues in the context of the demands of incident management. The primary functions of the focus area will be:

(1) to keep the IAB informed about policy developments in the area of incident management, and provide a vehicle for consolidating board comments about emerging policy,

(2) to identify equipment-related concerns that bear on the success of incident management,

(3) to identify the equipment requirements prompted by new incident management policy and ensure the inclusion of such equipment on the Standardized Equipment List,

(4) to identify opportunities for technology development that can facilitate the management of large-scale incidents,

(5) to facilitate communication between the IAB and other groups working on incident management issues. Incident management is a cross-cutting issue, and this focus area will be housed in the ICIS SubGroup, but will involve members from all of the IAB's SubGroups.

Accomplishments

IIn addition to updating and refining the SEL, ICIS SubGroup activities included participation at IAB general meetings, continued support to the Disaster Management Interoperability Services (DMIS) initiative, and support to several Marine Corps Systems Command Wireless Incident Response equipment initiatives. ICIS also provides support to the Memorial Institute for the Prevention of Terrorism's Project Responder and Responder Knowledge Base initiatives. In addition, ICIS continued its work on-line and at a SubGroup meeting in Baton Rouge, LA in March 2003. During the March session, ICIS established its work plan for 2003. The goals identified and achieved included:

- Developing a Model Protocol for Sensitive But Unclassified (SBU) Information Exchange (including definitions).
- Developing a Model Cyber (Virtual) Target Folder and Cyber Surety Playbook. (Building from existing physical response information/ target folder completed last year and presented in the 2002 Annual Report).
- Monitoring and advocating development of Operational Space (OpSpace) Visualization Tools.
- Continuing advocacy and monitoring of Tactical Telemetry Tools (i.e., wireless fusion and interoperability of sensor information from the "Forward Information Zone" to Incident Command Posts and "Rear Information Zone"[e.g., operations centers, etc.]).

Co-Chair

John Sullivan
Los Angeles County (CA) Sheriff's Department

Federal Co-Chair

Charles Bell
U.S. Marine Corps Systems Command

Membership

Joseph Booth
Louisiana State Police

Brett Burdick
Virginia Department of Emergency Management

Amy Donahue
NASA

Trey Gannon
Dartmouth College

Leo Guilmette
New York State Emergency Management Agency

Frank LePage
Department of Homeland Security, Office for Domestic Preparedness

Chris Lombard
Seattle (WA) Fire Department

William Snelson
United States Marshal's Service

* = Subject Matter Experts

* Ken Lukins, Hudson Marine Management
* Val Pietrasiewicz, National Institute of Standards & Technology, Office of Law Enforcement Standards
* Bob Tolle, National Research Laboratory
* Derrick Orr, National Institute of Science & Technology
* Mark Stanford, Texas Fire Service
* Harlin McEwen, International Association of Chiefs of Police
* Mark Jacobs
* Walt Kaplan

Cyber Target Folder Template

The ICIS SubGroup, working closely with representatives from the Los Angeles Terrorism Early Warning (TEW) Group and Disaster Management Interoperability Services (DMIS), developed a Cyber Target Folder Template. The cyber target folder (or Response Information Folder) template is closely related to the physical target folder template published in last year's Annual Report.

The cyber target folder template describes the computing resources that exist for an organizational entity (e.g., a city, county, or region). Those resources include physical devices, applications, data, connectivity associated with service, symbolic value, and criticality of functions for the organization. However, the perspective of the cyber target folder template is from that of the response decision-maker as opposed to that of the network administrator or chief security officer. With that focus in mind, the emphasis of the cyber target folder is on the services, connectivity, and contacts to information technology experts that relate to the operational mission of the responder. The Cyber Target Folder Template is represented in Figure 1.

Physical terrorism/disaster can cause collateral damage to cyber assets, which, in turn, can impede the operational mission of the responder. Increasingly, computing resources have become critical components of the operational response mission. The cyber target folder provides incident response decision-makers with enhanced situational awareness of potentially compromised information technology (IT) systems that are related to the operational mission.

The cyber target folder for an entity is closely related to the physical target folder because physical access might be required for intervention or physical damage could compromise the availability of computing resources. Thus, the cyber target folder provides links to the physical target folder. These links include physical location, point of contact information, and power information. The cyber target folder would indicate what electric service provider supplies the entity, what alternative power sources exist, and how long those sources can provide power to the computing resources.

The cyber target folder will significantly enhance the ability of responders to conduct simulations and exercises that incorporate computing resources. In turn, those exercises will provide feedback that assist in confirming or enhancing the existing target folder. Finally, the cyber target folder has been vetted with the assistance of representatives from the TEW, DMIS, Terrorism Research Center, Louisiana State Police, Seattle Fire Department, and the Institute for Security Technology Studies.

Model Sensitive But Unclassified Information Standard

The ICIS SubGroup developed a Model Standard categorizing Sensitive but Unclassified (SBU) Information during 2003. This model standard was presented to the IAB as a whole at New Orleans, LA on 3 June 2003. Homeland Security and Critical Infrastructure Protection missions have brought together local, state, federal, military, and private sector actors in order to respond to and protect our nation's infrastructure and citizens from terrorist attacks. This Model Standard for consideration by the Department of Homeland Security and public safety professional organizations recommends three categories of SBU information: (1) law enforcement sensitive, (2) public safety sensitive, and (3) critical infrastructure sensitive. *The model standard is shown as a sidebar to this SubGroup update on page 46.*

Current ICIS Priorities

The issues addressed by the ICIS SubGroup are complex and require a high degree of coordination in order to effectively articulate user requirements and stimulate technological innovation and development of interoperable doctrine for the public safety and homeland security communities. Issues identified and restated as ICIS priorities for the coming year are as follows:

- Geospatial intelligence (including visualization and the need for a geospatial standard[s])
  - Mapping tools, GIS, symbology, link geospatial with data-mining
  - Modeling standards (especially for fate & transport [-i.e., plume models, etc.])
- Information/data fusion (including geospatial, datamining, production, dissemination and distribution
  - Need for interoperability and a CONOPS for use of software agents and development of secure portals/data exchange
  - Model SBU standard categories
  - Need to integrate cyber security/surety into all tools
- Adaptive bandwidth management
- Virtual reach-back (data, voice, video, multimedia) and Tactical Telemetry (sensor arrays)

To convert these priority issues into useful products and practices for the responder communities, ICIS recommends prioritizing these tasks and critical technology initiatives into two tracks: fast track and longer range.

Fast track initiatives/needs include:

- Tactical Telemetry (moving information and integrating sensor arrays to transmit information from a "forward information zone" to a "rear information zone." The forward information zone includes the exclusion (hot), contamination reduction (warm), support (cold) zones, including an incident command post and intelligence support functions. The rear information zone includes operational and strategic entities, such as emergency operations center, department operations center, joint operations center and intelligence support.
- Interim Geospatial Standards (Standard Symbology for Geospatial applications for GIS data exchange).
- Interim Fate and Transport (plume model) Standards.

Longer Range initiatives/needs include:

- Cyber security (security and surety of data and information-sharing systems and networks)
- Standard Symbology for Geospatial applications
- Standards for Fate and Transport Models
- Datamining and exploitation/visualization of data-mining products

Model Standard for Uniform Terms for Categorizing Sensitive But Unclassified Information for Federal, Military, State, and Local Government and Private Sector Critical Infrastructure

Recommended by the IAB, ICIS SubGroup for Action by the Standards Coordination Committee at New Orleans, LA, on 3 June 2003

Homeland security and critical infrastructure protection missions have brought together local, state, federal, military and private sector actors in order to respond to and protect our nation's infrastructure and citizens from terrorist attacks. Law enforcement, fire service, emergency medical, public health, medical, emergency management, government officers, and elected officials, as well as private sector owners and operators of critical infrastructure and at-risk properties, now have the need to accurately, and unambiguously exchange information about current and pending threats. Traditional information classification applies only to U.S. Government agencies and their partners or contractors. The need for classified information still exists, and viable mechanisms for ensuring access to appropriate classified information by state and local interagency partners are still necessary. Nevertheless, there is a definite requirement to develop common terminology for "Sensitive But Unclassified" information, analogous to "For Official Use Only" information at the federal level. This Model Standard is designed to fill this need and to ensure effective operational interoperability among the Interagency, local, state, federal,and private sector "Interagency Community." The Interoperable Communications and Information Systems (ICIS) SubGroup therefore recommends this model standard for adoption by the IAB as a whole and requests assistance from the Chair and Standards Coordination Committee to transmit this model standard to the Department of Homeland Security and other appropriate entities for immediate consideration and adoption nationwide.

Sensitive But Unclassified (SBU):

Information needs its own hierarchy; it is recommended that three classes of SBU be designated: (1) law enforcement sensitive, (2) public safety sensitive, (3) critical infrastructure sensitive. It is also suggested that these classes of information receive legislative (federal and state) exemption from release by "Freedom of Information Act" or "Public Records Act" disclosure. Definitions of each follow.

Law Enforcement Sensitive (LES):

Information consisting of sensitive federal (non-classified), state, or local sources and means. This would include information that can compromise an investigation or officer safety if disclosed. This would be released only to law enforcement agencies with a need and right-to-know.

Public Safety Sensitive (PSS):

Information such as response plans, target folders, playbooks, and critical information that is needed to conduct law enforcement, fire, medical, or public health missions but when made available to an adversary, can compromise public safety or mission readiness. This would be released only to public safety agencies (including health care providers and agencies, as well as government officials) with a need and right-to-know.

Critical Infrastructure Sensitive (CIS):

Information that would include information on the functioning of (or threats to) privately held components of the critical infrastructure (electric power, refineries, water systems, information systems, railroads, etc.). This would be released only to the affected entities on a need and right-to-know basis.

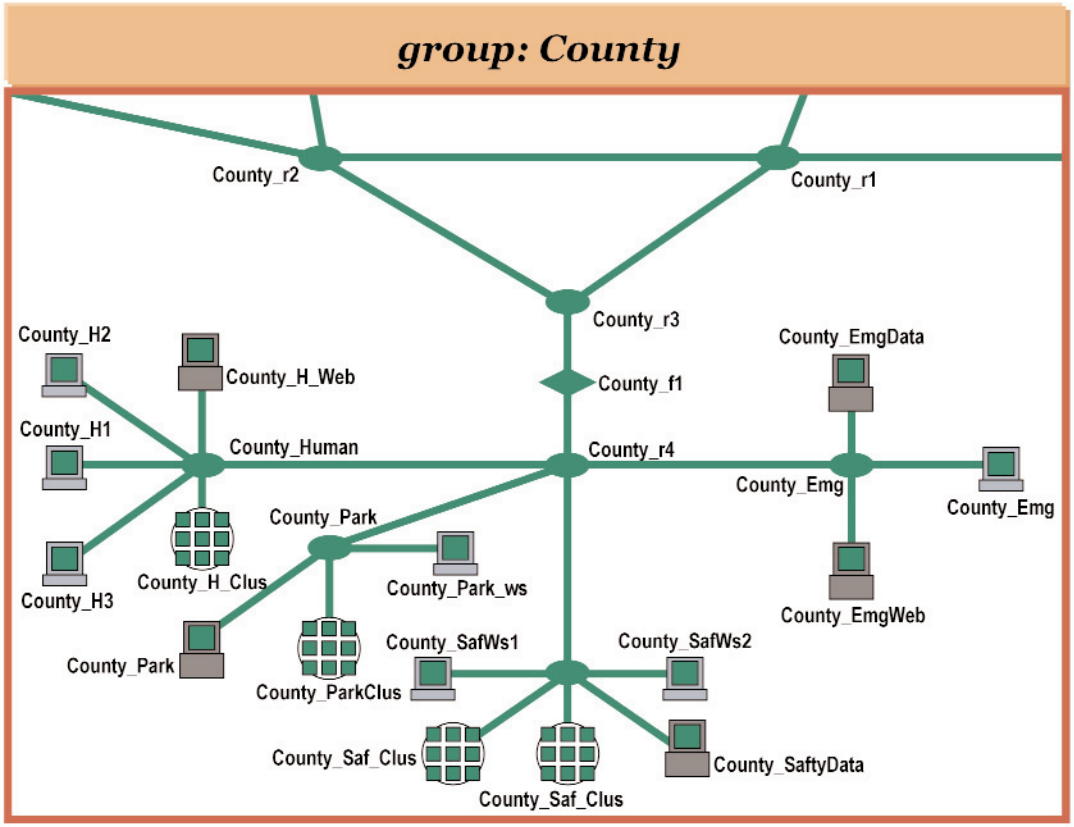
Additional information, such as specific dissemination restriction, could be appended following double front slashes (//), e.g., Public Safety Sensitive//No Public Dissemination. Finally, standard terminology for categorizing open source information (known as OSINT) is needed. "OSINT: Not Verified or Validated: Requires Further Analysis" is recommended.

Figure 1. Target Folder Template

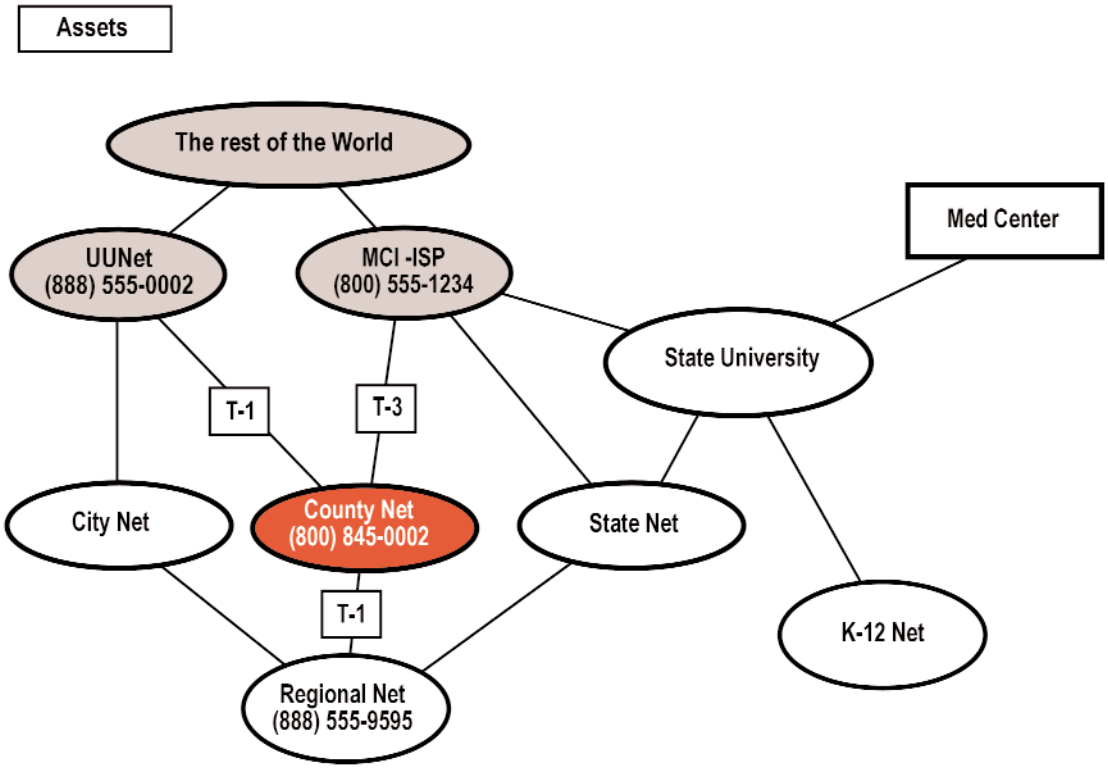
1. Site (Name/URL):	
• AKA/Commonplace name(s):	Name of computer or network Commonplace name (if applicable)
• Link to physical target folder:	Many aspects of the operational ability of the computer or network relate to the physical building where the assets are housed; therefore attach or link to physical target folder(s)
2. Location (IP Block/ Segment or network path):	
• Link to physical target folder:	Internet Protocol address or address block
3. Type/Functionality:	
• Information assets:	List valuable information stored on computer or network (i.e. server content, databases, etc.)
• Service assets/ Networks enabling access:	List valuable physical devices and software contained on computer or network (i.e. database server, mail server, MS Exchange, Oracle)
4. Hazards (MSDS):	
• Link to physical target folder:	
5. Day/Night Population:	
• Link to physical target folder:	
6. POC:	
• Name/title of contact person:	Primary person or group responsible for the operation of the computer or network
• Name/title of alternate:	Alternate person or group responsible for the operation of the computer or network
7. Phone/e-mail/website URL:	
• POC Contact numbers/methods:	List all relevant methods of communication; realizing that some (i.e. email, SMS phone, alphanumeric pagers) might be unreachable if network/Internet is unstable or overloaded
• Alternate Contact numbers/methods:	
8. Floorplan/Network diagram:	
• Link to physical target folder:	Attach a detailed network diagram (if applicable) - See example attached network diagram (Appendix A)
9. Photos:	
• Link to physical target folder:	
10. Power/Water/Air (HVAC):	
• Characteristics of backup power supply	List all installed backup power options and how long each source can provide power to facility (i.e. UPS, on-site generator, redundant utility power sources)
• Link to physical target folder:	
11. Downwind, Downhill:	
• Link to physical target folder:	
12. Lighting/Water:	
• Link to physical target folder:	

13. Intermodal Links (links to other target folders):	Attach a high level network diagram depicting upstream and downstream connections
	- See attached high level network diagram (Appendix B)
14. Systemic Impact:	
• Impact on the following upstream/ downstream facilities:	Describe impact on site's ability to operate/sustain operations - Rate impact on functions as Low, Medium, High, Very High, or Extreme should a compromise occur
15. Past Threat Hx:	
• Prior threat history:	List prior threats or attacks and relevant details
16. Symbolic Value:	
• Rate Low, Medium, High:	Estimate the relative symbolic value of a compromise to the computer or network or data contained therein
17. Key Dates for network/system:	
• Rate Low, Medium, High:	Indicate key operational dates for the computer or network
18. Criticality of Functions: People/Facility:	
• Impact on site's ability to operate/ sustain operations:	Estimate the criticality of the information or services provided by the computer or network
• Impact on functions (low, medium, high, very high, extreme):	Rate the impact of computer or network failure on normal services /staff operations
19. Vulnerability:	
• Rate risk of vulnerability/ alternative availability:	Indicate the vulnerability of the computer or network to compromise (i.e. LOW RISK - layered defenses, monitored 24/7, redundant servers and multiple bandwidth providers)
• Link to physical target folder:	
20. LZ, CP, S, D Locations:	
• Log in address, POC for action:	Indicate remote access methods
• Link to physical target folder:	
21. Commo. capabilities/limitations:	
• Describe network connectivity characteristics:	Detailed description of computer or network connectivity both upstream and downstream (if applicable)
• Link to physical target folder:	
22. Microclimates/Prevailing Winds:	
• Internet health monitor link	Provide links to relevant sources for local or general network stability (i.e. SANS Internet Storm Center)
• Link to physical target folder:	
23. Response Resource List:	
• Law, Fire, EMS response resources:	Detailed list of applicable emergency response units - See attached example diagram, Appendix C
• Cyber response sources:	Detailed list of applicable cyber emergency response groups - See attached example diagram, Appendix D
• Link to physical target folder:	

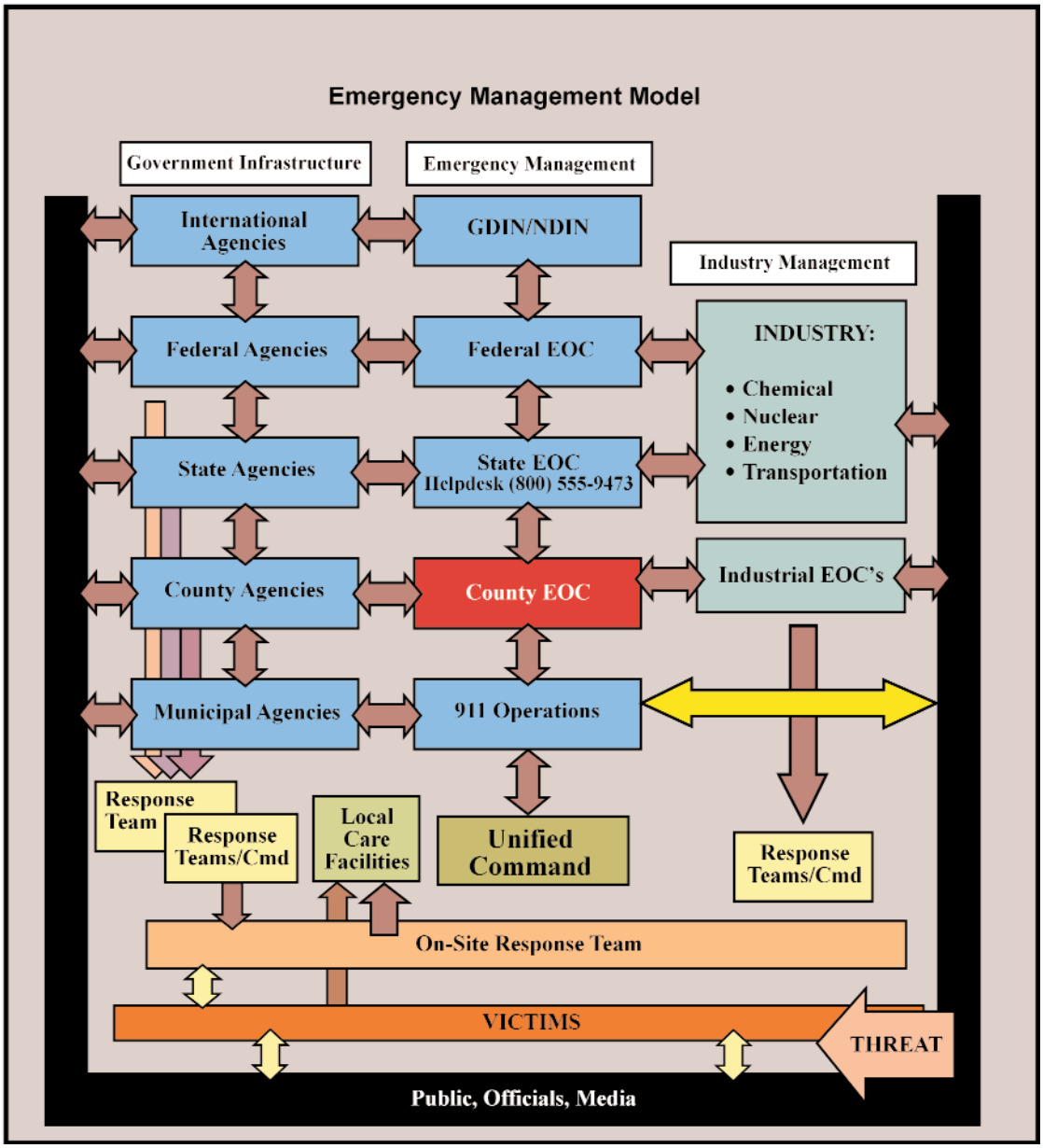
APPENDIX A - Detailed Network Diagram



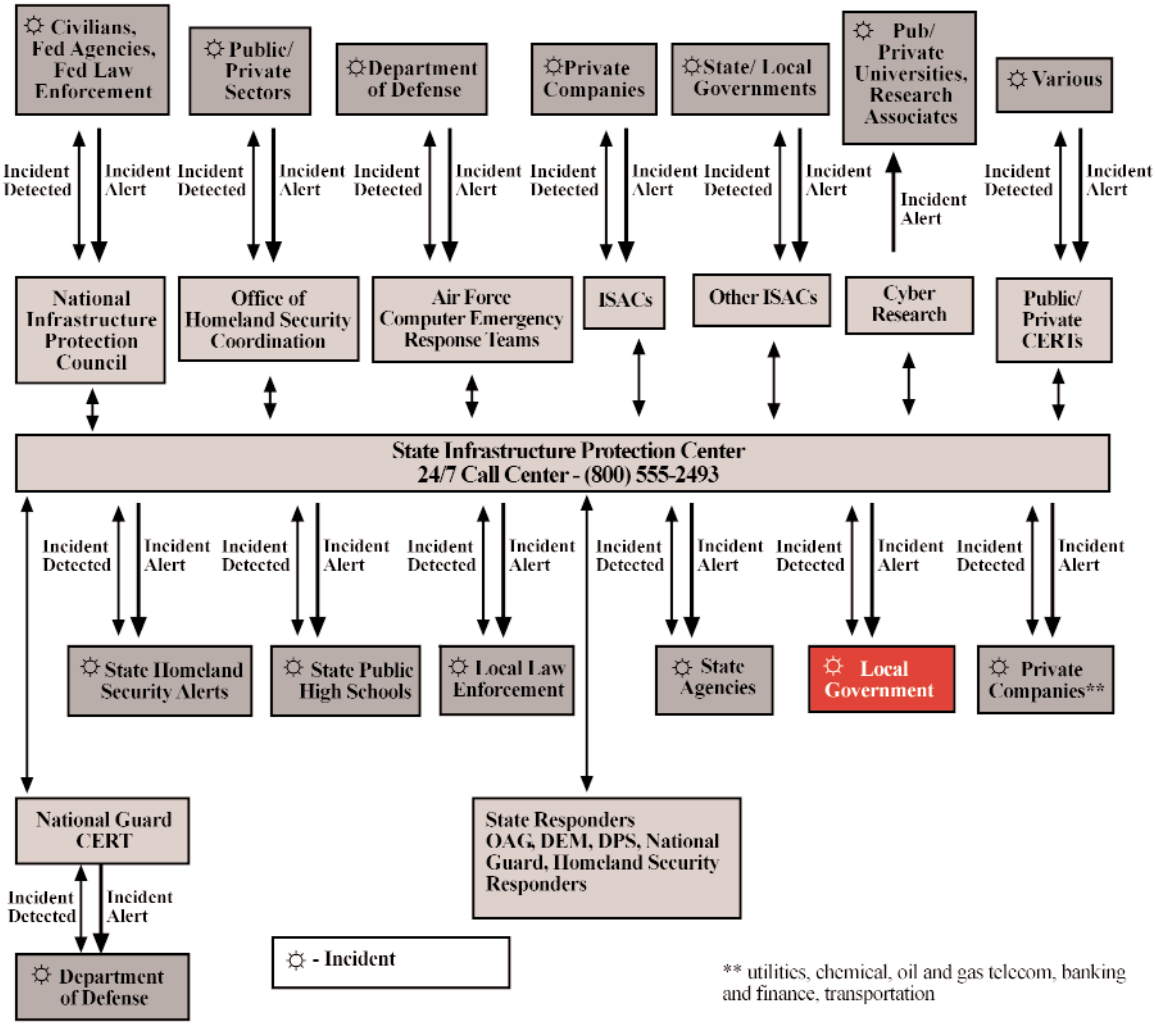
APPENDIX B - High Level Network Diagram



APPENDIX C - Emergency Management Model



APPENDIX D - Network Incident Response Function



Modeled after the Texas Infrastructure Protection Center's Incident Function (SIPAC Report, March 25, 2002), the above diagram is a proposed integrated communications network for cyber incident response.

John P. Sullivan
Sergeant
Los Angeles Sheriff's Department

John P. Sullivan is a sergeant with the Los Angeles Sheriff's Department where he coordinates the interagency, multidisciplinary Los Angeles Terrorism Early Warning Group. He is also a researcher and practitioner specializing in intelligence, conflict studies, terrorism, and urban operations. He holds a Bachelor of Arts in government from the College of William and Mary and a Master of Arts in urban affairs and policy analysis from the New School for Social Research. He is author or co-author or editor of *Policing Transportation Facilities, Policing a Multicultural Community, Jane's Unconventional Weapons Response Handbook, Jane's Facility Security Handbook, Emergency Preparedness for Transit Terrorism* and over 40 articles or chapters on terrorism, intelligence, policing and emergency response. These have appeared in *Networks and Netwars; Non-State Threats and Future Wars; Australian Police Journal; The Police Chief; Law Enforcement New; Terrorism, Violence, Insurgency Report, Crime and Justice International; New England Journal of Human Services; Transnational Organized Crime; Small Wars & Insurgencies; The Tactical Edge; Armed Forces Journal International; Marine Corps Gazette and Prehospital and Disaster Medicine* as well as other journals.

Charles R. Bell
Chief, Defense Consequence Management Systems Office
U.S. Marine Corps Systems Command

Charles R. Bell, founding member of the IAB, serves as Chief, Defense Consequence Management Systems Office (DCMSO) assigned to the Program Manager NBC, Marine Corps Systems Command, Quantico, VA. The office is responsible for the Life Cycle Management of Consequence Management systems and equipment for numerous Department of Defense organizations assigned primary or secondary missions in support of local authorities in the event of a terrorist attack using weapons of mass destruction and serves as the operational manager for the Office of Domestic Preparedness Prepositioned Equipment Program. The DCMSO also assists in the transfer of technology to local, state, and federal response organizations and the integration of military forces into response planning. Mr. Bell holds a Bachelors Degree in Economics and a Masters Degree in Education from the University of Southern Mississippi. He is a graduate of the New York City Fire Department Hazardous Materials Technician (HAZTECH) Course, Northern Virginia Criminal Justice Academy Special Weapons and Tactics (SWAT) Course, and the Department of Defense Emergency Preparedness Course.

SAFECOM

BACKGROUND ON PUBLIC SAFETY WIRELESS COMMUNICATIONS:

Inadequate and unreliable wireless communications have plagued public safety organizations for decades. These agencies are unable to share vital voice or data information via radio with other jurisdictions in day-to-day operations and in emergency response to incidents including acts of terrorism and natural disasters.

According to a report done by the National Task Force on Interoperability (February 2003), the public safety community has identified the following key issues that hamper public safety wireless communications today:

- Incompatible and aging communications equipment
- Limited and fragmented budget cycles and funding
- Limited and fragmented planning and coordination
- Limited and fragmented radio spectrum
- Limited equipment standards

In short, the nation is heavily invested in an existing infrastructure that is largely incompatible.

THE SAFECOM PROGRAM:

SAFECOM, established by the Office of Management and Budget and approved by the President's Management Council, has the mission to serve as the umbrella program within the federal government to help local, tribal, state, and federal public safety agencies improve public safety response through more effective and efficient interoperable wireless communications. Communications interoperability is the ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, when needed and as authorized.

SAFECOM is the first national program designed by public safety for public safety. As a *public safety practitioner driven-program*, SAFECOM is working with existing federal communications initiatives and key public safety stakeholders to address the need to develop better technologies and processes for the cross-jurisdictional and cross-disciplinary coordination of existing systems and future networks. SAFECOM harnesses diverse federal resources in service of the public safety community. The scope of this community is broad. The customer base includes over 50,000 local and state public safety agencies and organizations. Federal customers include over 100 agencies engaged in public safety disciplines such as law enforcement, firefighting, public health, and disaster recovery.

SAFECOM'S NEAR-TERM INITIATIVES:

- Develop a process to advance standards necessary to improve public safety communications and interoperability
- Integrate coordinated grant guidance across all agencies providing grants for public safety communications and interoperability
- Provide training and technical assistance for public safety communications and interoperability
- Create a one-stop shop for public safety communications and interoperability
- Research, develop, test, and evaluate existing and emerging technologies for improved public safety communications and interoperability

SAFECOM'S LONG-TERM GOALS:

- Provide policy recommendations.
- Develop a technical foundation for public safety communications and interoperability.
- Coordinate funding assistance for public safety communications and interoperability.
- Create and implement a national training and technical assistance program.

SAFECOM, with its partners, is assuring a safer America through effective public safety communications

David Boyd, Ph.D.; Director, SAFECOM Program Office; safecom@dhs.gov

Detection & Decontamination (D&D) SubGroup

Mission

The Detection and Decontamination (D&D) SubGroup provides input, direction, standards, and information to first responders on equipment to sample, detect, identify, quantify, and monitor for agent contamination. Additionally, the SubGroup provides direction, guidance, and information to support all hazards decontamination activities.

Functions

The D&D SubGroup is responsible for addressing equipment identification, interoperability, and standardization in three complex areas of detection and decontamination: chemical warfare agents (to include TICs), biological warfare agents, and radiological/nuclear materials. This work is accomplished by articulating user requirements for D&D equipment; identifying existing equipment guidelines or performance standards that address user requirements; and developing, maintaining, and updating the D&D portion of the SEL that provides the responder a reference to the type of equipment required to prepare for, respond to, mitigate, and recover from a CBRN incident.

Goals

- Facilitate the exchange of information between the first response community, government agencies, and private sector entities. This includes the sharing of knowledge, expertise, and technology regarding the detection, identification, warning, and decontamination of CBRN incidents.
- Participate in the development and implementation of performance criteria, standards, and test protocols for D&D response equipment and identify additional equipment and standards requirements.
- Facilitate and promote the standardization and interoperability of detection and decontamination capabilities to optimize response team integration and operations at the local, state, and national levels.
- Facilitate and promote the proper selection and use of the best available D&D equipment and procedures to optimize safety, interoperability, and efficiency.
- Encourage governmental, military, and private agencies, as well as manufacturers, to sponsor priority research and development projects to satisfy local, state, and federal CBRN incident response equipment requirements.

Current Projects

The Department of Homeland Security's S&T Directorate has funded the First Responder Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) Protective and Operational Equipment Standards Development Program. This program is the continuation of an ongoing comprehensive, multi-year program to develop an integrated suite of national standards for first CBRNE protective and operational equipment. This program is executed in close collaboration with the NIST/OLES conducting the technical program management of the project. The program involves many agencies and activities including NIOSH; the U.S. Army Research, Development and Engineering Command's (RDECOM) Edgewood Chemical Biological Center (ECBC); and the U.S. Army National Protection Center at Natick, MA; and the NFPA. The initial program focused primarily on chemical and biological protective equipment, but the scope of the program has grown to reflect the national needs and the needs of the first responder community. In FY 2003 the program was expanded to begin work on radiation and explosives detection standards, decontamination standards.

Development of Standards and Evaluation Criteria for Biological Detection Devices

The D&D SubGroup, along with the many responders across the nation, had articulated a need for performance criteria and test data for the bioassay tickets, currently available in the commercial market. To address this issue, the Department of Homeland Security has funded a Task Force on Bacillus Anthracis to develop a program for evaluating the accuracy and usefulness of immunoassay. The Federal Co-Chair of the D&D SubGroup, Elaine Stewart-Craig, is a member on the task force and has provided input from the D&D SubGroup on possible interferents, based on white powders commonly encountered, i.e., flour or baking soda. Al Fatah and Jim Schwartz of the D&D SubGroup are assisting in the effort to determine the appropriate labeling on the immunoassay ticket inserts. Sandy Bogucki, who is a member of the Medical SubGroup, is also a task force member. The task force anticipates having information available by the end of 2004.

Co-Chair

Gene Ryan
Chicago (IL) Fire Department

Federal Co-Chair

Elaine Stewart-Craig
Soldier Chemical and Biological Command, Edgewood Chemical and Biological Center

Membership

Ed Bailor
U.S. Capitol Police

Charlie Brannon
National Institute of Standards and Technology

Stephen Clendenin
Massachusetts Department of Fire Services

Tom Emsley
Program Executive Office for Chemical and Biological Defense

John Eversole
International Association of Fire Chiefs and Chicago (IL) Fire Department

Al Fatah
National Institute of Standards and Technology

Roger Hatfield
Nashau (NH) Fire Department

Robert Ingram
Fire Department, City of New York (NY)

Robert James
U.S. Marine Corps Chemical Biological Incident Response Force

Gene Links
Civil Support Team

Robb Pilkington
University of Missouri Fire and Rescue Training Institute

Gabriel Ramos
Technical Support Working Group

James Schwartz
Arlington County (VA) Fire Department

Pete Stevenson
Environmental Protection Agency

Wes Thomas
Downers Grove (IL) Fire Department

Dave Thompson
Massachusetts State Police/Explosive Ordnance Disposal Unit

* = Subject Matter Experts

* Steve Beaumont, U.S. Marine Corps Systems Command

* Robert Murphy, U.S. Capitol Police

* Irene Richardson, U.S. Army Center for Health Promotion and Preventative Medicine

* Ted Jarboe

Development of Standards for Commercial Chemical Detection Devices

A new ASTM International Committee, E54 Homeland Security Applications, has been formed to specifically address the needs of Homeland Security that are not addressed in other ASTM committees. Several members of the D&D SubGroup are members of E54 to assist in the development of the new standards. The first standard to be submitted to the Detection and Sensors subcommittee will be for portable chemical warfare vapor point detectors. This draft standard was developed under the Standards Development Program supported by NIST and NIJ using performance requirements' input from the D&D SubGroup. The agent concentration requirements of the portable chemical detector standard are based upon the concentration levels of the warfare agents that require a responder to put on, upgrade or remove personnel protective equipment at a terrorist event.

Development of Standards for Commercial Radiological Detection Devices

As part of the Homeland Security Standards Program, the D&D SubGroup has been working with ANSI to develop radiological detection standards. Four classes of detection equipment were initially addressed in parallel: pagers, portable detectors, isotope identifiers, and radiation portal monitors. Standards for response/recovery, consequence management/mitigation, and forensics/attribution equipment and systems, and training will also be developed in parallel. For each class of detection equipment, the S&T Standards Program will follow a process that includes development of general guidelines - based on input from the vulnerability assessments of the systems, the users, the developers, and the standards specialists. These guidelines will be used to craft specific performance measures and testing protocols, certification, reassessment, and training. This project will initiate a process for creation of formal national consensus standards for radiological and nuclear detection devices to be used by local/state/federal homeland security agencies.

Development of Test Methods for Decontamination Procedures

As part of the Homeland Security's, First Responder CBRNE Protective and Operational Equipment Standards Development Program, as well as the ASTM E54 Homeland Security Applications, the development of decontamination standards for personnel, equipment, and buildings is being addressed. The first year focus of the Homeland Security Standards Program is personnel decontamination. Information gathered from the health effects assessments and the hazard analysis is being used as the basis to model approximate levels of contamination to be expected as well as the level of removal required to reduce or eliminate all lasting health effects.

The ASTM E54 committee on Decontamination is still in the process of determining its scope of effort and will be requesting assistance from the emergency response community.

Gene Ryan
Deputy District Chief, Special Operations - Hazardous Materials Coordinator
Chicago Fire Department

Chief Ryan is a 24-year veteran of the Chicago Fire Department with 17 years of Hazardous Materials and Terrorism Response Experience. In 1999 he founded, and still currently serves as the Chairperson of the Chicago Terrorism Working Group. Chief Ryan is a hazardous materials' and terrorism instructor for the Illinois Fire Service Institute as well as the National Fire Academy. In addition to serving as the D&D SubGroup Chair, Chief Ryan serves as a member of the Illinois Terrorism Taskforce and is a Sub-committee Member for Bioterrorism and Crisis Response. He Serves as response member of the Illinois State Weapons of Mass Destruction Team and as an on-scene advisor for State-wide hazmat response for MABAS. He is a voting member of the Chicago Local Emergency Planning Committee and Chairman of the Subcommittee on Emergency Response, as well as a member of the Illinois Department of Public Health Terrorism Task Force and the Department of Defense Executive Inoperability Counsel of Consequence Management Inoperability Service Program.

Elaine M. Stewart-Craig
Chemical Engineer, Soldier Chemical and Biological Command
Edgewood Chemical and Biological Center

Elaine M. Stewart-Craig is a Chemical Engineer who has worked for the Edgewood Chemical and Biological Center for 20 years. Her current assignment is Program Manager for the development of Chemical and Biological Standards for commercial equipment, including protective ensembles and detectors, to be used by the emergency response community in the event of a terrorist attack. This program is a joint effort between ECBC-NIOSH-NIST and is funded by the Department of Homeland Security. She is a member of ASTM Committee E54 Homeland Security Applications. She began her career in the Personnel Protection Equipment, designing and producing chemical/biological protective masks and filters for the military. She has been involved with Quality Assurance, Strategic Planning and future business development for the Edgewood Chemical and Biological Center. She has been involved in the area of Homeland Security/Defense since 1995. Mrs. Stewart-Craig earned her B.S. in Chemical Engineering from the University of Virginia and a Masters of Business Administration from Loyola College.

Medical SubGroup

Mission

The Medical SubGroup's mission is to provide guidance to the IAB regarding health and medical aspects of local, state, and federal standardization, interoperability, and responder safety to prepare for, respond to, and recover from any incident by identifying requirements for CBRNE incident response equipment.

This mission, at its heart, is to represent the needs of medical first responders, first receivers, and follow-on responders. Be they paramedics, emergency department physicians, Disaster Medical Assistant Team (DMAT) nurses, Medical Reserve Corps volunteers, or any other of the hundreds of thousands of medical personnel who are tasked with managing the casualties of a CBRNE event, the Medical SubGroup is committed to ensuring that the IAB rises to the challenge of meeting their needs.

The medical aspects of the CBRNE response mission and the associated equipment needed to make this mission successful are, in many ways, the most complex aspects of national critical incident preparedness. The challenges specific to identifying appropriate equipment (the scope of the IAB mission) for the broad range of missions and environments that are represented by the management of patients and responders have and continue to result in substantial debate and focused efforts by the Medical SubGroup to represent and accommodate this diversity.

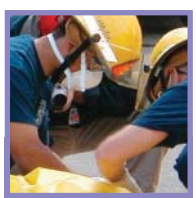
Membership

Like its mission, the membership of the Medical SubGroup is exceptionally diverse. Members represent federal, state, and local organizations and include EMS and hospital clinicians, disaster medicine/response specialists, pharmacists, public health and emergency department physicians, representatives of academic institutions engaged in substantive research, and members of the emergency management community.

Functions and Roles

The Medical SubGroup participates in all aspects of the IAB. Due to the diversity of the medical mission, which includes the care of casualties as well as the health and safety needs of personnel participating in the management of the incident, the MSG routinely interfaces with each of the other IAB subgroups. Specifically, the functions and roles include the following:

- Representing the medical community on the Standards Coordination Committee
- Representing the medical community on the Science and Technology Committee
- Developing, reviewing, and refining the Medical portion of the SEL


- Identifying existing gaps in the current response equipment and supplies
- Supporting the development of new equipment and standards where applicable

The majority of the items utilized in the medical management of victims of a WMD are regulated through the U.S. Food and Drug Administration. For that reason, the compilation of equipment and pharmaceuticals in the Medical portion of the SEL is commonly found in today's pre-hospital and clinical environments.

Initiatives and Progress

The MSG initiatives expressed in the 2002 SEL have been completed. The year ahead will find the MSG focusing on:

- Developing a comprehensive list of gaps within the current medical response capabilities
- Working with the PP&OE SubGroup to develop recommended PPE ensembles for follow-on responders such as organized volunteer groups
- Reviewing and making recommendations on NFPA 473 and the proposed OSHA Recommendations for First Receiver PPE

The Medical SubGroup will contribute to and support the work of other IAB subgroups and benefit from the standards developed there, e.g., PPE for healthcare professionals, detection and monitoring equipment, decontamination, communications, etc.

Since the inception of the IAB, the Medical Sub-Group has been a proponent of local planning and determination of capability for the care and treatment of injured persons. To this end, the MSG appreciates and supports initiatives that enable localities to assess and evaluate vulnerabilities in their medical community, evaluate their level of preparedness, define the gaps in that preparedness, and develop solutions to ensure the highest level of medical care possible for the anticipated affected population. Certainly, a well-planned and supported public education program can have a significant impact in decreasing the number of persons victimized by an enemy.

Co-Chair

Porter Shellhammer
Sarasota County (FL) Fire Department

Federal Co-Chair

Paul Kim
Department of Veteran Affairs, Emergency Management Strategic Healthcare Group

Membership

Sandy Bogucki
Yale University Emergency Medicine

Kelly Burkholder-Allen
The University of Finlay, Center of Terrorism Preparedness

Rich Burton
Placer County (CA) Health & Human Services

Chris Callsen
Austin - Travis County (TX) Emergency Medical Services

Neal Dolan
U.S. Secret Service

Keith Holtermann
George Washington University, School of Medicine and Health Services

Paul Maniscalco
National Association of Emergency Medical Technicians

Tim McAndrew
City of Las Vegas (NV), Office of Emergency Management

Ken Miller
Orange County (CA) Fire Authority

Steve Skowronski
Centers for Disease Control and Prevention

Tom Skowronski
Phoenix (AZ) Fire Department

Lawrence E. Tan
New Castle County (DE) Police Department, Emergency Medical Services

Tom Walsh
Seattle (WA) Fire Department

*= Subject Matter Experts

* Frank Cilluffo, George Washington University
* Stephan Graham, U.S. Army for Health Promotion and Preventive Medicine
* Scott Deitchman, Terrorism Preparedness and Emergency Response Centers for Disease Control and Prevention, National Center for Healthy Housing/Agency for Toxic Substances and Disease Registry

Porter T. Shellhammer
Battalion Chief
Sarasota County Fire Department

Chief Shellhammer was a member of the fire service for 29 years. His most significant accomplishments include the development of a Hazardous Materials Team and the establishment of department documents implementing and utilizing the Incident Command System. He is an adjunct instructor for the National Fire Academy and co-developer of the NFA's Emergency Medical Services: Special Operations course and the National Terrorism Preparedness Institute's course on Medical Strategies for WMD Incidents. Porter is a charter member of the InterAgency Board and serves as Co-Chair of the Medical SubGroup. He participated for many years with the Florida Division of Forestry on the Red Overhead (Incident Management) Team and was credentialed as a Resource Unit Leader and a Type-2 Plans Section Chief. During February of 2002 he was selected by the Park City (UT) Fire Service District to work as a Plans Section Chief for the 2002 Winter Olympic Games. He has a Bachelor's degree from International College in Naples, FL, in Executive Leadership and is a graduate of the National Fire Academy's Executive Fire Office Program.

Paul D. Kim, M.D
Emergency Management Strategic Healthcare Group
New York Network of Veterans Affairs

Paul D. Kim, M.D., Area Emergency Manager of the Office of the Emergency Management Strategic Healthcare Group for the Upstate New York Network of Veterans Affairs and NDMS hospitals and medical centers, has been involved in crisis management emergency preparedness since 1985. Dr. Kim graduated from Fordham University with a B.S. in Psychology and with a Doctor of Medicine degree from the University of Juarez, Mexico. Dr. Kim has served on the Designated Agency Safety and Health Office of the Department of Veterans Affairs (DASHO/VA) national task force, is an active member of the Management of Disturbed Behaviors National Task Force of the Department of Veterans Affairs and maintains a Master Trainer designation, has lectured and trained thousands of Government and private sector personnel on safety in the workplace, is the appointed co-chair of a 4 county Anti-Stalking Task Force in the Capital District of New York State, was assigned to the Emergency Operations Center for the City of New York in the Health and Medical cell in response to the 9/11 attacks, and was recently appointed to the Editorial Board for the *Journal of Emergency Management*.

Emergency Response Technology Program

The National Technology Transfer Center's (NTTC) Emergency Response Technology (ERT) Program is a national initiative focused on commercializing products designed to keep America's emergency responders safe and effective in performing their duties. With a focus on fire service and established through funding from Federal Emergency Management Agency (FEMA), the ERT Program receives technical direction from the Department of Homeland Security's Science and Technology Directorate. The ERT Program supports the needs of the ERT Group (ERTG) and gets direction from the ERTG. The ERTG is an elite group of expert emergency managers and official stakeholder representatives from the seven major fire service organizations that serve as the foundations of the Congressional Fire Caucus and many other first responder organizations.

KEY SERVICES

Emergency Response Technology Needs: The ERT program has identified and prioritized a list of top needs facing the emergency response community. When existing commercial products fail to meet these needs, the NTTC works with federal laboratories, universities, inventors, and private industry to develop and identify cost-effective solutions and bring these products to market.

Coordination with the ERTG: The program coordinates its activities per the direction and requirements of the ERTG, in that NTTC provides a direct access to the ERTG.

ERT Program website: The ERT program maintains the website to showcase existing products and required technology solutions for the emergency response, developer, and manufacturer/distributor communities.

PROGRAM SUCCESSES

- Negotiations are underway on more than a dozen agreements with potential development partners to provide funding and support of high-priority R&D projects to the emergency response community.
- The ERT Program receives funding from NASA to ferret out new technologies with applications to emergency response. A number of technologies have been identified and are under evaluation.
- The DoD recognizes the ERT Program as a vehicle to comply with public law. This relationship has paved the way for collaborative relationships with organizations such as the Natick Army Research Center, the Naval Research Laboratory, and the Federal Inter-Agency Technical Support Working Group on Combating Terrorism.
- The ERT Program collaborates with the NIST Building and Fire Research Laboratory on development of performance standards, and has identified two programs from the NIST Advanced Technology Program and the NIST Small Business Innovation Research (SBIR) Program that will receive commercialization assistance.
- The ERT Program assisted with the commercialization of the HazMat Smart-Strip and Bio-Containment System, both of which are now being used internationally.
- The ERT Program participated in the Top Off II exercise, held May 15, 2003 in Chicago, which assessed the nation's capability/response to a series of no-notice, integrated, geographically dispersed terrorist threats and acts.
- Many existing products and those under development are validated for suitability and effectiveness in real world conditions at one of the ERT Program's "test beds." A number of complete reports are available on the ERT Program's website.

FUTURE IMPACT

Continuing Efforts:

- Identify evolving first responder needs through the efforts of the ERT Advisory Group.
- Identify developing technologies and available products that meet more than 40 specific need areas identified by the ERT Group, including: general fire, public safety, hazardous materials, and terrorism response.
- Perform operational test and evaluation of technologies that may meet an identified need.
- Provide information on evaluated technologies to the first responder community.

UPCOMING EFFORTS: Provide recommendations to DHS for funding on developing technologies that have direct application to first responder needs.

Strategic Plan for Developing a Suite of Chemical, Biological, Radiological, Nuclear, and Explosives Protective Equipment Standards

Executive Summary

A common suite of first responder equipment standards is needed to establish minimum performance and interoperability requirements for Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) equipment utilized by local, state, and federal first responders to acts of terrorism and CBRNE incidents. Such standards, and the associated requirements and test protocols, serve multiple purposes, including (1) establishing baseline capabilities and limitations for currently available equipment, (2) guiding production and technological developments by manufacturers and designers, and (3) guiding equipment procurement decisions by the public safety and health communities. This document presents the strategy and process within the InterAgency Board (IAB) for Equipment Standardization and InterOperability for identifying, adopting, modifying, and developing CBRNE equipment standards. The priorities for developing standards will be established and periodically reviewed by the IAB Standards Coordination Committee (SCC). It does not address the specifics of schedules, resources, or those standardization processes that are agency and organization specific. It is relevant to note that no such suite of CBRNE equipment standards exists today, and it is a goal of the IAB to remedy this shortcoming.

This CBRNE Equipment Standards process will be accomplished through two phases - "Preparation Phase" and an "Implementation Phase." During the Preparation Phase, requirements for standards will be identified from local, state, and federal first responder functional and operational equipment requirements. These equipment requirements will be compared with existing standards to determine whether existing standards can be adopted into the CBRNE Equipment Standards Suite, modifications are required, or gaps exist requiring new standards to be developed. During the Implementation Phase, the recommendations of the equipment SubGroups will be coordinated with appropriate standards organizations to facilitate adoption, modification, and development of standards for incorporation into the CBRNE Equipment Standards Suite. Gaps in standards will be presented to sponsoring agencies and organizations for new standards development. A review process will be established and managed by the SCC to periodically validate the suite and all incorporated standards.

The National Institute of Standards and Technology, Office of Law Enforcement Standards (NIST/OLES), as the executive agent for the SCC, will implement and administer the CBRNE Equipment Standards Suite repository, to include promulgation where appropriate. Implementation of this suite of standards is expected to be a multi-year process. In the interim, to address the user communities' needs for CBRNE equipment information, NIST/OLES, on behalf of the SCC, will publish and administer a first responder equipment set of guides to assist first responder agencies in making informed procurement decisions.

The Strategic Plan for Developing a Suite of CBRNE Protective Equipment Standards
1.0 Purpose

A common suite of CBRNE equipment standards is necessary to ensure compliance with minimum requirements for performance, commonality, and interoperability of equipment utilized by local, state, and federal first responders in the public safety and health communities. Such standards, as well as the specifications and test protocols that evolve from them, are needed to guide the efforts of the manufacturers and equipment developers and to serve as a guide for informed procurement decisions by criminal justice, medical/public health, and public safety agencies. The phrase "public safety and health communities" includes law enforcement, firefighter, HAZMAT, emergency medical, and other related agencies that consist of the first elements to respond to CBRNE incidents or attacks and also pertains to organizations that are involved in the mitigation and recovery phases of such

attacks. This document describes the strategy and process that the CBRNE Equipment Standards Project will take to develop that common CBRNE Equipment Standards Suite. This document further serves as the action plan for the CBRNE Equipment Standards Project and identifies the tasks that must be undertaken, and the organizations responsible for undertaking them, to implement a CBRNE Equipment Standards Suite. It does not address the specifics of schedules, resources, or those standardization processes that are agency-specific. Those remain to be developed within the context of this strategic plan.

The IAB Standards Coordination Committee (SCC) will establish the prioritized order for developing or adopting standards, and will periodically review and revise the prioritization as requirements change or as standards are implemented.

2.0 Goals and Objective

2.1 *Goal of the CBRNE Equipment Standards Project* - to enhance public safety and health by defining and promulgating a set of standards for CBRNE equipment that ensures minimum performance, quality, and reliability and that are accepted by public safety and health communities. This suite of standards will be disseminated to the local, state, and federal public safety and health communities to facilitate informed equipment procurement and to guide manufacturers, developers, and the test-and-evaluation community to ensure product compliance.

2.2 *Objective of the CBRNE Equipment Standards Project* - The objective is to facilitate the adoption of standards that can be used by local, state, and federal public safety and health communities. To accomplish this, strong working relationships must be established with the public safety and health communities, to the point where the communities' representatives play a key and integral role in all facets of the standards process. Further, the project must be oriented, to the maximum extent possible, toward using the approaches, standards, specifications, etc., that already exist within Standards Development Organizations (SDOs), Standards-Related Organizations (SROs), and Standards Enforcement Organizations (SEOs). This project will not reinvent work previously done or provide redundant products, but rather will take advantage of all available information and standards that may be applicable. This project will conform to the regulatory statutes and guidance governing the SDOs, SROs, and SEOs, as applicable.

3.0 Overview of the CBRNE Equipment Standards Suite Development Process

The standards development process consists of two distinct phases - the "Preparation Phase" and the "Implementation Phase." During the Preparation Phase, functional requirements are defined and existing standards are surveyed to determine whether they address these requirements. During the Implementation Phase, gaps in the existing standards will be addressed. Additionally, because the implementation of this suite of standards is necessarily a time-consuming process, some interim steps will need to be taken to provide manufacturers, developers, and procurement officials guidance upon which they can act now.

3.1 *Preparation* - During the Preparation Phase, requirements for standards will be identified by determining the first responder functional equipment requirements and comparing those requirements against existing standards to see (1) if existing standards can be adopted into the CBRNE Equipment Standards Suite (2) if they need to be modified before being adopted, or (3) if new standards need to be developed. Functional requirements are derived in equal measure from an assessment of the threat(s) with which first responders will have to deal and the operational practices and procedures (i.e., how they do business) that they will bring to bear to deal with that threat. Users will be involved in every stage of this process, providing initial input and feedback on final products.

3.1.1 Identification of the Threat - The first step in the standards development process will be to do a threat assessment to identify the particular agents that are likely to be encountered in a CBRNE terrorism situation, the scenarios in which these agents are likely to be used by terror-

ists, and the likely methods of agent delivery in a civilian environment. Since the best information is likely to be held by national security organizations and will most likely be classified, it will, of necessity, be restricted to a limited number of people who have the proper security clearances. The second step of the threat assessment will involve situations where simulated releases can be conducted, using simulants, to develop the appropriate "models" and response methods, while working with trained public safety and medical teams.

3.1.2 Identification of Operational Requirements - This step involves collection of detailed information regarding the functional and operational requirements of CBRNE equipment based on user needs, practices, and procedures, i.e., how they go about their business. While identification of the threat defines the nature of the agent(s) and the design parameters for a self-contained breathing apparatus, for example, practices and procedures will define the size and weight of that apparatus, how long it needs to function, and how (and if) it needs to be decontaminated. The information will be summarized and catalogued by equipment type.

3.1.3 Survey and Assessment of Existing Standards

3.1.3.1 Existing standards relevant to CBRNE equipment will be surveyed to identify any that can be used without any modification, as well as those that can be used with some modification. The SCC will develop a review and approval procedure for both adoption and modification of existing standards. That procedure must take into account the agency-specific requirements and procedures of organizations currently involved in the development of standards.

3.1.3.2 In instances where the SCC review of existing standards has determined that a particular standard(s) not be adopted in whole or in part, it shall issue a report to the IAB, documenting the limitations and/or shortcomings of the existing standard(s).

3.1.3.3 Recommendations for adoption, modification and adoption, as well as the identification of new standards to be developed, will be recorded for action during the Implementation Phase.

3.1.3.4 Implementation - During the Implementation Phase, recommendations resulting from the Preparation Phase will be carried out through coordination with appropriate SDOs, SROs, and SEOs to facilitate adoption, modification, and development of standards for incorporation into the CBRNE Equipment Standards Suite. A periodic review process to validate that the suite and the standards incorporated into it will also be implemented.

3.2 *Adoption of Existing Standards* - Standards that require no modification will be added "as is" to the CBRNE Equipment Standards Suite. The adoption and inclusion of a standard into the suite will follow the review and approval process as developed by the SCC. Cognizant SDOs, SROs, and SEOs will be notified. These standards will be disseminated to the state, local, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

3.2.1 Modification of Existing Standards - If the SCC determines that an existing standard needs to be modified before it can be used, the review process and a discussion of the limitations shall be documented. Modification to standards will be coordinated with the cognizant SDOs, SROs, and SEOs for implementation. In cases where existing standards are not able to be modified to meet the specific needs of the IAB, a new standard will be developed as discussed in paragraph 3.2.2. These modified standards will be disseminated to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

3.2.2 Development of New Standards - This type of document will need the most time and resources to develop, as well as the most extensive review process to ensure consensus.

Where applicable, the need for new standards will be coordinated with the cognizant SDOs, SROs, and SEOs for development. If the appropriate SDOs, SROs, and/or SEOs cannot be convinced to modify a standard, or if no cognizant SDO/SRO/SEO can be found to develop a new standard, the identified requirement will be addressed through the issuance of a voluntary standard(s). These standards will be issued as National Institute of Justice (NIJ) standards. These standards will be disseminated to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

3.2.3 Methodology for Reviewing Standards - A process will be put in place so that, on a biannual, periodic basis, the standards included in the CBRNE Equipment Standards Suite will be reviewed in light of evolving threats, evolving technologies, user practices, and user procedures to:

- Reaffirm still useful standards and disseminate that information to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

- Recall obsolete standards once a review finds a document obsolete; and disseminate that information to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

- Provide notification when any standards incorporated into the CBRNE Equipment Standards Suite are updated, modified, revised, replaced, or superceded by the SDO or SRO and when exceptions or waivers are granted by SEOs.

3.3 *Interim Steps* - A first responder equipment compendium and set of guides will be developed and published to assist first responder agencies in making informed procurement decisions prior to the implementation of a CBRNE Equipment Standards Suite. These documents will catalogue existing CBRNE equipment and their characteristics and contain test data where found. Of necessity, interim voluntary standards and/or comparative evaluation protocols for testing of CBRNE equipment will also be developed and implemented for selected categories of equipment and threats.

4.0 Organization and Responsibilities

4.1 The key organizations within the IAB that facilitate the development of the CBRNE Equipment Standards Suite are the Equipment SubGroups and the Standards Coordination Committee. The equipment SubGroups take the lead for developing the functional requirements for equipment in their commodity areas, in close collaboration with the user community. They also identify and recommend to the SCC existing standards for direct incorporation into the CBRNE Equipment Standards Suite, standards that could be incorporated with modification, and new standards that need to be developed. The SCC, which includes the Chairs of the equipment SubGroups, will manage this process and will be principally responsible for implementation and management of the suite.

4.2 Standards Coordination Committee (SCC)

4.2.1 The SCC consists of a panel of representatives from various federal and private standards organizations, the Co-Chairs of the equipment SubGroups, and the Co-Chairs of the Science and Technology Committee. The SCC is responsible for coordinating CBRNE equipment standards projects of the IAB SubGroups with other organizations and enforcing authorities including, but not limited to, National Institute for Occupational Safety and Health (NIOSH), National Fire Protection Association (NFPA), Occupational Safety and Health Administration (OSHA), National Institute of Justice (NIJ), Department of Energy (DOE), Federal Emergency Management Agency (FEMA), Environmental Protection Agency (EPA), and the Office of Law Enforcement Standards (OLES) of the National Institute of Standards and Technology (NIST). As the various equipment SubGroups of the IAB determine minimum performance, quality,

reliability, and other qualification requirements for their respective commodities, the SCC, representing regulatory, consensus, and voluntary standards organizations, will endeavor to create national harmonization by incorporating the requirements into its standards. The SCC will also serve as a reviewer during the development of qualification requirements by other SubGroups to:

- Alert SubGroups and request reconciliation when contradictory requirements for complementary equipment are proposed.

- Alert SubGroups when proposed requirements are contradictory to federal or state regulations.

- Raise attention to similar or additional qualification requirements under internal development within the regulatory, consensus, and voluntary standards organizations.

- Provide technical and non-technical advice for improvements.

4.2.2 In the absence of appropriate standards for equipment deployed by emergency responders, the SubGroup members will serve as liaisons to their respective organizations to encourage development and harmonization of standards. The Office of Law Enforcement Standards at the National Institute of Standards and Technology (NIST/OLES), as the executive agent for the SCC, will implement and administer the CBRNE Equipment Standards Suite, to include promulgation.

4.3 *Equipment SubGroups* - There are four equipment SubGroups established by the IAB. These SubGroups are composed of subject matter experts who address domestic preparedness equipment, systems, and protection issues related to a specific commodity area. The four equipment SubGroups are (1) the Medical SubGroup, (2) the Personal Protective and Operational Equipment SubGroup, (3) the Detection and Decontamination SubGroup, and (4) the Interoperable Communications and Information Systems SubGroup. Each SubGroup has two co-chairs, one from the ranks of the SubGroup's local and state ranks and the second from federal or private ranks. The role of each SubGroup is to maintain and update its portion of the Standardized Equipment List and to address the ways and means by which technology can support CBRNE response concerns. Additionally, the SubGroups take the lead for developing the functional requirements for equipment, and identify and develop priorities for standards development within their respective commodity areas. The SubGroups identify existing standards that may be incorporated into the CBRNE Equipment Standards Suite without change, identify standards that may be incorporated into the suite after modification, and recommend areas for development of standards where none currently exist.

4.4 The Science and Technology Committee (STC) - The mission of the STC is to identify interagency (local, state, and federal) first responder research and development (R&D) requirements and innovative technologies (fieldable in the next 6 months to 5 years) that address CBRNE detection, individual and collective protection, medical support, decontamination, communications systems, information technology, and miscellaneous operational support. The STC consists of subject matter experts in the R&D field, the Co-Chairs of the equipment SubGroups and the Co-Chair of the SCC.

5.0 Execution

5.1 The CBRNE Equipment Standards Suite will be developed, promulgated, and administered as outlined above. The work will be conducted during regularly scheduled meetings of the IAB, specially convened SubGroup sessions, and by members of the SubGroups as directed by the SubGroup Chairs.

5.2 *Standards Coordination Committee* - The SCC will solicit input from the equipment SubGroup(s), consolidate input, and develop priorities for subsequent efforts, as outline in section 3.0. The SCC will develop, maintain, and publish the list of IAB adopted CBRNE Protective Equipment standards, and develop a schedule for periodic review of these standards.

5.3 *Equipment SubGroups* - The equipment SubGroups will perform the steps outlined in section 3.0 according to a schedule developed by the Standards Coordination Committee.

5.4 *NIST/OLES* - The NIST/OLES serves as the executive agent for the SCC and implements, administers, and promulgates the CBRNE Equipment Standards Suite repository as appropriate. Additionally, NIST/OLES will publish, administer and maintain a set of first responder CBRNE equipment guides. These guides will catalogue existing CBRNE equipment and their characteristics and will contain test data where available.

Special Thanks

The InterAgency Board would like to extend special recognition to the National Memorial Institute for the Prevention of Terrorism (MIPT) and the Responder Knowledge Base team. Their work played a key role in the development of the 2004 Standardized Equipment List. Particular accolades go to Don Hewitt and his staff for their dedication and commitment to this project.